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Juurlink, T.T.

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**Occupational functioning in
personality disorders:**
a quantitative, qualitative and
semi-experimental approach

VRIJE UNIVERSITEIT

Occupational functioning in personality disorders:
a quantitative, qualitative and
semi-experimental approach

aan de Vrije Universiteit Amsterdam,
op gezag van de rector magnificus
prof.dr. V. Subramaniam,
in het openbaar te verdedigen
ten overstaan van de promotiecommissie
van de Faculteit der Geneeskunde
op dinsdag 26 januari 2021 om 11.45 uur
in de aula van de universiteit,
De Boelelaan 1105

door
Theresia Trijntje Juurlink
geboren te Coevorden

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Chapter 1

Introduction

Linda, 30 years of age and trained as a caregiver, ran into difficulties setting personal boundaries early in her career. When working in a nursing home, she visited her clients outside office hours, for an extra cup of tea or a little chat. Later, when working at a hospital children's ward, she could not shake off the sad faces and stories she heard during the day once she was home. Her supervisor, but also her family appreciated her compassion, but also advised her to stop working in her own time, and actively take control over her feelings. Linda agreed and felt she had to toughen up. Therefore, she set herself the goal of entering the Military Police.

This new role gave her a position of power, which made her self-confidence grow. Again, she had difficulty putting aside her feelings of compassion for victims, and her strong tendency to fight injustice. Luckily, this time, she was in a position to save victims and catch perpetrators. In her team, it was Linda who took the leadership role, as she felt she was the one that knew best. However, the amount of injustice she encountered overgrew her ability of safeguarding victims on her own. Linda became irritable and aggressive. Initially, her irritability resulted in conflicts in her private life, but eventually also with colleagues and her supervisor. After several incidents, her contract was not extended. Fortunately, Linda found a new job as a security guard, but her feelings of irritability and aggression remained. Again, incidents and verbal

aggression occurred at work.

*Linda entered mental health treatment and received the diag-
noses borderline and paranoid personality disorder. She prefers
to call it emotion dysregulation disorder. According to Linda,
the difficulty with regulating her emotions is the main problem
at work. Since Linda's supervisor accidentally found out about
her mental health issues, and while being understanding, she
feels that her colleagues and supervisor treat her differently, and
therefore, she is looking for a new job again.*

Linda's case provides some insight in the difficulties people with
personality disorders (PDs) might encounter in their working life.
The effect of mental health vulnerabilities on one's ability to work
is significant, and maintaining employed is an important part of
recovery. In recent years, momentum to improve gaining and
maintaining employment in individuals with mental health vul-
nerabilities has been growing (Mental Health (Nederlandse GGZ) /
Social Security Administration (UWV) covenant 2018). Despite dif-
ficulties in gaining and maintaining employment, most individuals
with mental health vulnerabilities want to work. Being employed
also positively contributes to general well-being, social status,
income security, time structure, sense of identity and self-esteem
(1,2).

To date, few studies have examined occupational functioning
in PDs. Therefore, the focus of this thesis is to obtain a better un-
derstanding of occupational functioning in individuals with PDs,
incorporating the perspectives of individuals with PDs, mental
health practitioners, and occupational physicians. It is important
to involve these different perspectives, as they all play a pivotal
role in improving sustainable employment. Also, as borderline

personality disorder (BPD) accounts for the least favourable outcomes in occupational functioning among PDs (3–8), in this thesis, occupational functioning in individuals with PDs is investigated with a special focus on individuals with (symptoms of) BPD.

In this chapter, the main symptoms of PDs and BPD are explained. Next, current knowledge regarding occupational functioning in PDs and BPD is reviewed. Following this, the role of occupational health and the workplace are discussed. Finally, Individual Placement and Support (IPS), an evidence-based method of supported employment, is described as a potential method to improve occupational functioning in PDs. To conclude, the aims and outline of this thesis are described.

PERSONALITY DISORDERS AND BORDERLINE PERSONALITY DISORDER

PDs are characterized by enduring dysfunctional patterns of cognition, affect regulation, interpersonal and self-functioning and impulse control. These dysfunctional patterns are inflexible, pervasive across a broad range of personal and social situations, and cause considerable personal distress or impairment in social, occupational, or other important areas of functioning (9). The PDs are grouped into three clusters based on descriptive similarities. Cluster A includes the paranoid, schizoid, and schizotypal personality disorder. Individuals with PDs in this cluster often appear odd or eccentric, and common features in this cluster are social awkwardness and social withdrawal. Cluster B includes the antisocial, borderline histrionic, and narcissistic personality disorder. Patients with cluster B PDs are marked by dramatic, emotional, and erratic responses and often have problems in impulse control and emotional regulation. Cluster C includes

the avoidant, dependent, and obsessive-compulsive personality disorders and refers to anxious, fearful PDs that share a high level of anxiety. Despite this clustering of PDs, the individual PDs are argued to be very heterogeneous and symptoms vary between individuals (10). Table 1 presents the different PD types with their main characteristics. In the general population, the prevalence of PDs is 6-13,5% (11–13). However, in clinical samples, prevalence rates are much higher, varying between 45-60,4% in psychiatric outpatients (12,14–16).

BPD is a severe personality disorder characterized by mood instability, sensitivity to abandonment, identity disturbance, impulsivity, self-mutilating behaviour, feelings of emptiness and difficulty controlling anger. Typically, individuals with BPD are very sensitive to environmental circumstances and can have perceptions of impeding separation or rejection, or loss of external structure that can lead to changes in self-image, affect, cognition, and behaviour (9). In Table 2, the diagnostic criteria of BPD are presented. BPD is furthermore associated with severe limitations in social relationships and functioning (9,17,18). Typically, BPD has its onset in adolescence which is also the developmental age of setting educational and occupational goals (19,20). Previous studies showed that BPD pathology at adolescent age predicted poorer academic and occupational status (21) and poorer achieved developmental milestones 20 years later (22). BPD occurs frequently with other PDs and other mood and anxiety disorders, as well as substance use and eating disorders (23,24). In the general population, the prevalence of BPD is about 1-2.4% (25,26). In clinical samples of mental health care patients the prevalence of BPD is 10-20%, in samples of PD patients 30-60% (23).

DSM-5 has been in use since 2013. Before 2013, the diagnostic

approach to PDs was solely based on a categorical perspective, suggesting that PDs are distinct clinical syndromes (9). It has since been argued that PDs should be viewed from a dimensional perspective, as PDs represent maladaptive variants of personality traits that merge imperceptibly into normality and into one another (9). Therefore, the DSM-5 includes a model that dimensionally conceptualizes the PD diagnosis in addition to the previously described categorical approach. However, in the present thesis, DSM-IV based PD diagnoses was used.

Table 1. DSM-IV-TR description of Personality Disorders

Paranoid personality disorder	Pattern of distrust and suspiciousness such that others' motives are interpreted as malevolent
Schizoid personality disorder	Pattern of detachment from social relationships and a restricted range of emotional expression
Schizotypal personality disorder	Pattern of acute discomfort in close relationships, cognitive or perceptual distortions, and eccentricities and behaviour
Antisocial personality disorder	Pattern of disregard for, and violation of, the rights of others
Borderline personality disorder	Pattern of instability of interpersonal relationships, self-image, and affects, and marked impulsivity
Histrionic personality disorder	Pattern of excessive emotionality and attention seeking
Narcissistic personality disorder	Pattern of grandiosity need for admiration, and lack of empathy
Avoidant personality disorder	Pattern of social inhibition, feelings of inadequacy, and hypersensitivity to negative evaluation
Dependent personality disorder	Pattern of submissive and clinging behaviour related to an excessive need to be taken care of
Obsessive-compulsive personality disorder	Pattern of preoccupation with orderliness, perfectionism, and control
Personality disorder Not Otherwise Specified	This category is for disorders of personality functioning that do not meet criteria for any specific personality disorder. An example is the presence of features of more than one specific Personality Disorder that do not meet the full criteria for one personality disorder, but that together cause clinically significant distress or impairment in one or more important areas of functioning (e.g., social or occupational).

Table 2. DSM-IV-TR Diagnostic criteria of BPD

The essential feature of BPD is a pervasive pattern of instability of interpersonal relationships, self-image, and affects, and marked impulsivity that begins by early adulthood and is present in a variety of contexts, as indicated by five (or more) of the following criteria:

1. Frantic efforts to avoid real or imagined abandonment. Note: Do not include suicidal or self-mutilating behaviour covered in Criterion 5;

2. Pattern of unstable and intense interpersonal relationships characterized by alternating between extremes of idealization and devaluation;

3. Identity disturbance: markedly and persistently unstable self-image or sense of self;

4. Impulsivity in at least two areas that are potentially self-damaging (e.g., spending, sex, substance abuse, reckless driving, binge eating). Note: Do not include suicidal or self-mutilating behaviour covered in Criterion 5;

5. Recurrent suicidal behaviour, gestures, or threats, or self-mutilating behaviour;

6. Affective instability due to a marked reactivity of mood (e.g., intense episodic dysphoria, irritability, or anxiety usually lasting a few hours and only rarely more than a few days);

7. Chronic feelings of emptiness;

8. Inappropriate, intense anger or difficulty controlling anger (e.g., frequent displays of temper, constant anger, recurrent physical fights);

9. Transient, stress-related paranoid ideation or severe dissociative symptoms.

OCCUPATIONAL FUNCTIONING IN PERSONALITY DISORDERS

Ample evidence shows that millions of working days are lost every year due to mental health-related absence (27–30). In PDs, indirect costs constitute the bulk of total costs of PDs (31,32). In a study by Gustavsson and colleagues (2011), including patients with BPD and antisocial PD, it was even found that 78% of the total costs were related to productivity loss and absenteeism. Soeteman and colleagues (2008) found that one third of total costs of PDs were attributable to loss of productivity costs and absenteeism. In their sample of PD patients (n=1740) 53.7% was employed. Among these workers, those with borderline and obsessive-compulsive PD had higher indirect costs. The authors argue that the relative economic burden of PDs is higher than that of depression and generalized anxiety disorder, and comparable to that of psychotic disorders. Both studies argue that indirect costs for PDs may actually be higher, due to comorbidity with other PDs and other mental disorders that by themselves contribute to impaired occupational functioning.

Moreover, not only patients with full-blown PD diagnosis have impaired occupational functioning and are more often unemployed (33–37), but also individuals with mere personality traits (38–42). Although, symptoms of PDs tend to diminish over time, and PDs are generally responsive to treatment, occupational functioning tends to remain poor, irrespective of clinical symptom remission and adequate treatment (18,43,44). This is particularly the case in patients with BPD, urging further research into occupational dysfunction in BPD (4,8). Furthermore, comorbidity of PDs with other common mental disorders, such as mood, anxiety and substance use disorders is both common (25,26,45), and associated with increased occupational impairment (24,46).

In addition, individuals with depressive and anxiety disorders by definition have higher risk of absence and decreased work performance (2,47).

Despite the evidence that all PDs, and certain PD symptoms, are at least to some extent associated with impaired functioning and unemployment, little is known about how PD symptoms influence specific outcomes of occupational functioning. Although heterogeneity within PDs is large and PDs can range in severity and type of symptoms, a hallmark symptom of PDs is having problems in interpersonal relationships (14). In a work context, this might include interpersonal relationships with employers, supervisors, and co-workers (36). Still, symptoms may both impede and facilitate occupational functioning. For example, an individual with BPD might have difficulty attaining occupational goals due to emotional turbulences, whereas an individual with narcissistic PD might achieve greater professional success due to an extremely competitive nature (36). Furthermore, it is conceivable that outcomes on occupational functioning in PDs are mediated by comorbidity, severity and working conditions at the job (26,48).

A number of studies examined specific occupational outcomes and symptoms in relation to BPD. In a literature review it was found that BPD patients had a greater number of jobs, were overall less often employed, were more likely to be paid 'under the table', and were more likely to be fired from the job (7). In a sample of college students, BPD symptoms appeared to have an indirect effect on task performance through task strategy (49). Furthermore, the BPD criterion impulsivity was found to be associated with poorer vocational outcome in outpatient youth with BPD (50). Furthermore, vocational engagement was equally im-

paired in youth with BPD as compared to youth with first episode psychosis and depression (51,52).

OCCUPATIONAL HEALTH

An important role in the assessment and support of occupational functioning in individuals with mental health lies within occupational health. Despite the major impact of mental health on occupational dysfunction, only few clinical practice guidelines for occupational physicians (OPs) exist (53). There are two Dutch guidelines specifically geared towards individuals with mental health vulnerabilities or BPD (54,55). However, concerns have been raised regarding guideline adherence and high variability between medical experts, due to different skillsets, attitudes and beliefs of the professional (56–59).

Lugtenberg and colleagues (2016) qualitatively explored the perceived barriers and suggested solutions to improve guideline adherence in mental health problems. Several attitude- and knowledge-related barriers were mentioned: i) lack of agreement with guidelines in general, ii) lack of self-efficacy, e.g. not feeling capable of performing certain guideline recommendations due to a perceived lack of training or experience, iii) lack of outcome expectancy, iv) belief that the organization would not take any further action based on the reasoned advice of the OP, and v) inertia of previous practice. Also, three external barriers were mentioned: i) worker factors (e.g. potential hidden agendas of workers aimed at a specific assessment outcome), ii) guideline factors (e.g. lack of overview with having both an extensive guideline and a large background document), and iii) work-contextual barriers (e.g. work pressure/lack of time, organizational constraints, contracts with employers).

Furthermore, abundant evidence shows that the stigma of PDs is high among mental health professionals (60–63). Also, individuals with PDs are often perceived as 'difficult' (64) or purposefully misbehaving (60). These factors may likely contribute to stereotypes and prejudices towards individuals with PDs that affect the assessment of work ability and support to employment in these individuals. Because of the difficulties of individuals with PDs with regulating emotions and interpersonal relationships it may be worthwhile to improve the skills in OPs specifically geared towards individuals with PDs.

THE WORKPLACE

Extensive literature shows that psychosocial work stress is among the risk factors for both mental ill health and sickness absence in working populations (48,65–67). A widely used model of work stress is the job strain model of Karasek and colleagues (68). In this model, psychological job demands imposed by the job (e.g. work load), and decision latitude (the level of autonomy and professional skills), are two important aspects with respect to work stress. High psychological job demands may cause stress, whereas higher decision latitude may reduce stress and may buffer the effect of psychological job demands. Other important working conditions are social support, relating to the amount of experienced support by co-workers and supervisors, and job security (69–73).

Moreover, working conditions were found to be associated and corresponding to improvements or deterioration of anxiety and depression symptoms (74). This suggests that improving jobs would likely improve mental health, emphasizing the strong relationship between the two. Concurrently, work of poor

psychosocial quality is not associated with better mental health as compared to unemployment (75). In part, working conditions are determined by the type and demands of the tasks in relation to the job. Working conditions however also relate to the social relationships and environment at the workplace.

With respect to individuals with mental health issues in general, employers and others in the work environment often hold negative attitudes that decreases the chances of individuals with mental health issues being hired or supported (76–78). Shankar and colleagues (79) qualitatively explored employers' perspectives on hiring workers with mental health disorders. Despite negative comments and previous experiences, most employers were willing to hire trainees with mental disorders and accommodate them if they would demonstrate appropriate work behaviour, such as the 'right' work attitude, motivation to learn, and ability to the job. Further suggested solutions to enhance hiring workers with mental health disorders were: i) to increase mental health literacy of frontline managers and other employers, ii) improve the lack of resources to address mental health issues of workers, iii) that workers must take responsibility to save their job, and iv) improve poor coordination and communication among service systems since managers are not mental health professionals. Still, prejudice and discrimination are an ongoing challenge. However, the working environment is important to take into account as a place of change, rather than only changing the worker's abilities (76,79).

INDIVIDUAL PLACEMENT AND SUPPORT
At the start of this research project, the idea was to set up a randomized controlled trial (RCT) of supported employment within

the treatment regimen of PD patients. However, the RCT could not proceed due to changes in the financial landscape of supported employment in the Netherlands. Nonetheless, awareness for the difficulties in occupational functioning and support of individuals with PDs were growing during this project, given the many conferences and trainings in occupational health to which I was invited to present my research. Yet, despite this growing awareness, very little attention has been paid to improving occupational functioning in PDs.

An evidence-based method of supported employment developed for individuals with severe mental illnesses (SMI) integrated within mental health care and the workplace, is Individual Placement and Support (IPS) (80). This method centres on the 'place then train' principles of direct employment and starts from patient preferences. Typically, the IPS worker works in close collaboration with the mental health team and workplace to provide adequate support or intervene timely in times of distress. IPS is originally developed for implementation in outpatient mental health care. Ample research shows that IPS is effective in individuals with psychotic disorders and affective disorders, patients within forensic mental health care, patients with substance use, musculoskeletal and neurological disorders, and veterans (81–89). Despite IPS' effectiveness, still individuals with severe and common mental disorders remain 7 to 3 times more likely to be unemployed compared to individuals without disorders (1,76,90). Furthermore, review studies suggest that augmented IPS programs specifically geared towards the patient group induce better outcomes in terms of employment as compared to a standard IPS program (91–94).

So far, it remains unclear whether IPS is equally effective and

suitable for patients with PDs. Arguably, individuals with PDs are more hindered in work by their difficulties in interpersonal functioning than patients with psychotic disorders by negative and cognitive symptoms (95,96) or patients with affective disorders by a lack of motivation (97). Furthermore, for PDs and specifically for BPD, it is argued that the vocational rehabilitation professional, such as the IPS worker, should have ample knowledge about the development of BPD and BPD treatments (98). Fortunately, the IPS landscape has changed since the start of this thesis and meanwhile IPS has been implemented in a few specialized treatment teams for PDs in the Netherlands. However, empirical evidence of IPS being effective in the treatment regimen for PDs remains lacking.

AIMS OF THIS THESIS

As PDs are an important health burden with large effects on occupational functioning, it is important to improve current knowledge. Occupational functioning is connected to multiple factors, such as workers (mental) health, mental health treatment, occupational health, working conditions and the workplace. Therefore, the question rises what factors contribute to occupational dysfunction in PDs. Therefore, the aims of this thesis are: 1) To study the relationship between occupational functioning and BPD (symptoms), both in the general population and patient samples, using both quantitative measures in large cohorts and qualitative measures in specifically selected patient samples., 2) To study the extent to which IPS is effective as a method of supported employment for PDs as compared to other mental illnesses.

Insight into the relation between PDs and occupational

functioning may contribute to improvement of prevention and interventions for disability among individuals with PDs or PD symptoms.

Outline of this thesis

To study the first aim, we conducted four studies. In Chapter 2 we study the association between BPD symptoms, measured with the International Personality Disorder Examination (IPDE), with outcomes on occupational functioning in workers from the general Dutch population as included in the Netherlands Mental Health and Incidence Study (NEMESIS). In addition, we study if this association is mediated by adverse working conditions and comorbidity with common mental disorders. In Chapter 3 we study the association between BPD symptoms, measured with the Personality Assessment Inventory Borderline features (PAI-BOR), and occupational functioning in workers with and without depressive and anxiety disorders as included in the Netherlands Study of Depression and Anxiety (NESDA). In Chapter 4 the perspectives on barriers and facilitators to employment in BPD from patients, mental health practitioners and insurance physicians are explored qualitatively. Barriers and facilitators are described in three themes and the implications for practice based on the presented perspectives are discussed. In Chapter 5 we examine characteristics and predictors of vocational disengagement (employment and education) in a sample of young people with BPD aged 15 – 25 years.

For the second aim, we study the effectiveness of Individual Placement and Support (IPS) in PDs in Chapters 6 & 7. These chapters describe two studies in which effectiveness of IPS specifically for participants with PDs is examined in comparison

to participants with other mental illnesses. In Chapter 6, we use data from the first Dutch randomized controlled trial in the Netherlands on IPS (the Study of Cost-effectiveness of IPS on Open employment in the Netherlands, SCION) to study whether having a PD diagnosis moderated the effect of IPS. In Chapter 7, we examine if employment outcomes differ between IPS participants with PDs compared to IPS participants with other mental disorders in a larger registry-based cohort sample. For this cohort, data of enrolment and commencement in IPS programs from the Employee Insurance Agency (UWV) are linked with corresponding data on employment outcomes, mental health diagnostic and sociodemographic information from the Statistics Netherlands (CBS).

In the final chapter the main findings of the studies presented in the previous chapters are summarized and discussed.

Chapter 2

Borderline personality disorder symptoms and work performance: a population-based survey

Trees Juurlink

Margreet ten Have

Femke Lamers

Hein van Marle

Han Anema

Ron de Graaf

Aartjan Beekman

ABSTRACT

This study aims to elucidate the interplay between borderline personality disorder (BPD) symptoms and working conditions as a pathway for impaired work performance among workers in the general population. Cross-sectional data from the Netherlands Mental Health Survey and Incidence Study-2 (NEMESIS-2) were used, including 3,672 workers. BPD symptoms were measured with the International Personality Disorder Examination (IPDE) questionnaire. Working conditions (decision latitude, psychological job demands, job security and co-worker support) were assessed with the Job Content Questionnaire (JCQ). Impaired work performance was assessed as total work loss days per month, defined as the sum of days of three types of impaired work performance (inability to work, cut-down to work, and diminished quality at work). These were assessed with the WHO Disability Assessment Schedule (WHO-DAS). Common mental disorders (CMD) were assessed with the Composite International Diagnostic Interview (CIDI). Number of BPD symptoms was consistently associated with impaired work performance, even after controlling for type or number of adverse working conditions and co-occurrence of CMD. BPD symptoms were associated with low decision latitude, job insecurity and low co-worker support. The relationship between BPD symptoms and work performance diminished slightly after controlling for type or number of working conditions.

The current study shows that having BPD symptoms is a unique determinant of work performance. This association seems partially explained through the impact of BPD symptoms on working conditions. Future studies are warranted to study causality and should aim at diminishing BPD symptoms and coping with working conditions.

INTRODUCTION

Borderline personality disorder (BPD) is a severe mental disorder characterized by impulsivity, emotional instability, interpersonal dysfunction, perturbed self-image and severe functional impairment (3,6). BPD is associated with unemployment, extensive use of social benefits, and therefore high societal costs (3,33,99). Ten Have and colleagues (26) found that even minimal BPD symptoms are associated with functional impairment and unemployment. Little is known however, about the prevalence of BPD symptoms and functioning among those still at work. Studying risk factors for impaired work performance is important, because the costs due to work loss constitute the bulk of total societal costs associated with mental disorders (29). Furthermore, most people want to work, emphasizing the importance for interventions aimed at improving work performance.

Impaired work performance is often defined as absenteeism (days a worker is absent) and presenteeism (days of reduced functioning while at work) (30). Potential risk factors of impaired work performance are mental health, such as common mental disorders and personality disorders (3,30), and adverse working conditions (100). The job demands-control model of Karasek is often used for measuring psychosocial working conditions such as decision latitude, psychological job demands, job security and co-worker support (68). Plaisier and colleagues (101) showed that low co-worker support and low decision latitude were associated with higher absenteeism among workers with and without depressive and anxiety disorders. Vlasveld and colleagues (38) showed that personality characteristics are associated with absenteeism in both healthy workers and workers with depres-

sive and anxiety disorders. We expect that this is also true for workers with BPD symptoms and therefore hypothesize that BPD symptoms influence work performance and that adverse working conditions will mediate the relationship between BPD symptoms and impaired work performance (Figure 1).

With respect to the working conditions, we expect (i) that BPD symptomatology diminishes the experienced decision latitude because individuals with BPD have been shown to experience difficulties in planning, decision-making and controlling their impulses (102,103). Difficulties with planning and decision-making might increase feelings of stress. Thus, we hypothesize (ii)
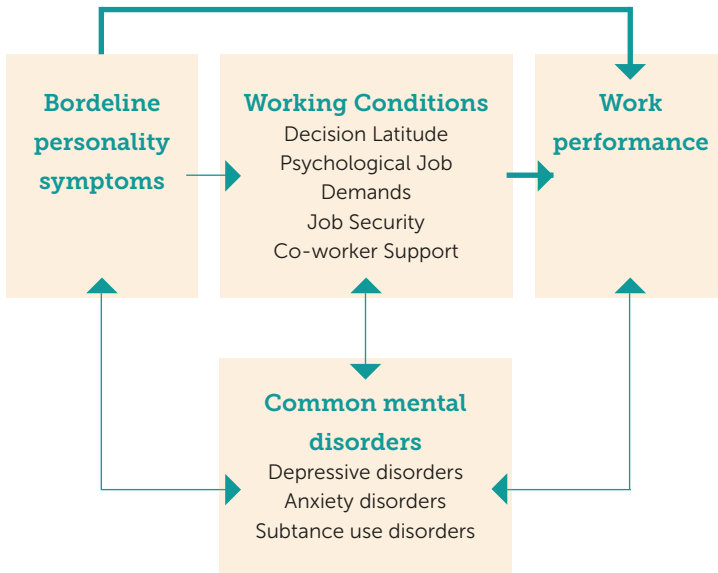
Fig. 1 Proposed model of the interplay between borderline personality symptoms, working conditions and concurrent common mental disorders as a pathway for work performance. Thick arrows indicate direct effect and thin arrows indirect effect. Bidirectional arrows indicate potential confounding variables

that workers with BPD symptoms experience high psychologi-
cal job demands. Individuals with BPD were previously found at
increased risk for dismissal and demotion (3) and therefore we
anticipate (iii) that workers with BPD symptoms experience high
job insecurity. Interpersonal dysfunction is a key feature of BPD
(104) which could lead to conflicts in the workplace (3,33). Con-
sequently, we expect (iiii) that workers with BPD symptoms will
experience low co-worker support.

BPD (symptoms) often co-occur with common mental dis-
orders (CMD), such as depression and anxiety (26). These are by
themselves associated with absenteeism (48,105) (and presen-
teeism (30). Therefore it is important to control for concurrent
CMD when studying the interplay between BPD symptoms,
working conditions on work performance. We used a community
based sample from the Netherlands Mental Health Survey and
Incidence Study-2 (NEMESIS-2) and aimed to test (i) the associ-
ation between BPD symptoms and impaired work performance,
(ii) whether this association was mediated by adverse working
conditions and which working conditions are associated with
BPD symptoms, while (iii) taking the effect of concurrent CMD
into account.

METHODS

Sample
Data were used from the second wave of NEMESIS-2, in which BPD symptoms were assessed and questionnaires on working conditions and work performance were administered. For the present study we selected 3,672 participants (1,831 men and 1,841 women) with a paid job of > 12 hours per week (as in: Ten Have et al. 2015).

NEMESIS-2 is a nationally representative survey of the general adult population in the Netherlands aged 18 to 64 years (26,106). Participants were selected from households based on multi-stage, stratified random sampling, selecting one participant per household. In the first wave (T0) from November 2007 to July 2009, a total of 6,646 persons were interviewed (response rate 65.1 %; average interview duration: 95 min). Although younger participants were slightly underrepresented, the total sample was nationally representative. Interviews were generally held at the participant's home and all interviews were computer-assisted. Three years after T0 from November 2010 to June 2012, participants were approached for follow-up (T1). In this second wave 5,303 persons were re-interviewed (response rate 80.4%, those deceased excluded; average interview duration: 84 min). Attrition rate was not significantly associated with common mental disorders at baseline, after adjusting for sociodemographic characteristics (107). For rationale, objectives and methods of NEMESIS-2 see De Graaf and colleagues (106). The NEMESIS-2 study protocol was approved by a medical ethics committee, and all participants provided written informed consent.

Measures

BPD symptoms were measured using eight questions from the International Personality Disorder Examination (IPDE) (108) corresponding with the DSM symptom criteria for BPD. These questions are part of the Composite International Diagnostic Interview (CIDI) 3.0 – a fully structured lay-administered diagnostic interview (109). A true-false inventory format was used and the accumulative scores of the total sum of 'true' responses were assessed. The higher the score, the larger the number of BPD symptoms. One criterion for BPD (recurrent suicidal behaviour, gestures or threats, or self-mutilating behaviour) was not assessed. However, suicidal ideation and/or planning or attempts to suicide were asked in the suicidality module of the CIDI 3.0 (26).

Working conditions were assessed with the Job Content Questionnaire (JCQ) (65). Four working conditions were used: decision latitude (9 items, α= 0.81), psychological job demands (5 items, α= 0.60), job security (3 items, α= 0.67) and co-worker support (4 items, α= 0.79). Response categories were based on 4-point Likert scales ranging from 'strongly disagree' to 'strongly agree', except for two questions on job security that were based on 3-point Likert scales. The number of missing values on each scale was very small, except for co-worker support (9.1%) where the missing values were almost all due to workers without colleagues. We kept these missing values and did not redefine them as having no adverse working condition. With respect to BPD symptoms, workers without colleagues were not significantly differing in number of BPD symptoms compared to those with low or high co-worker support.

Additionally, the number of adverse working conditions was assessed as a measure of job quality consistent with previous

studies (48,75). The adverse working conditions were first defined as present on each scale if a score fell in the quartile of the distribution that corresponded to the greatest adversity (e.g. low latitude, high demands, low security and low support). The four adversities were then summed to report the experienced number of adverse working conditions. Missing values on any of the separate working condition adversities except for low co-worker support resulted in a missing on the summary measure of number of adverse working conditions (1.1%). The measure ranged from 0 to 3 or more adversities and was analysed as an ordinal variable.

Work performance was conceptualized as absenteeism and presenteeism and assessed by three questions on the WHO Disability Assessment Schedule (WHO-DAS) (110). The questions related to impaired work performance due to illness of the past 30 days and specifically asked the following: (a) "How many days out of the past 30 were you totally unable to work or carry out your normal activities?", (b) "How many days out of the past 30 were you able to work and carry out normal activities, but had to cut down on what you did or not get as much done as usual?" and (c) "How many days out of the past 30 did you cut back on the quality of your work or how carefully you worked?". Total work loss days were based on the sum of days of the three different types of work loss, as previously published (30). In case of absence for all working days, the two answers on reduced functioning were assigned a value of zero. One day of reduced functioning was counted as half in line with other studies (111,112). The maximum number of lost workdays was set at 21.5 days per month for fulltime workers and proportioned for part-time workers. The following categories were used for analysis: 0, 0.1-5 or > 5.1 days of work loss.

Presence of CMD was assessed with the CIDI version 3.0, which was developed and adapted for use in the World Mental Health Survey Initiative (109). An improvement on the Dutch version of the CIDI 3.0 was used in NEMESIS-2. The 12-month disorders include: mood disorder (i.e. major depression, dysthymia and bipolar disorder), anxiety disorders (i.e. panic disorder, agoraphobia, social phobia, specific phobia and generalized anxiety disorder) and substance use disorders (alcohol/drug abuse and dependence). The CIDI 3.0 was found to assess mood, anxiety and substance use disorders with generally good validity in comparison to blinded clinical reappraisal interviews (113).

Next to mood, anxiety and substance use disorders, sex, age, education, and living situation (with or without partner) were considered putative confounders, since these variables are associated with BPD (26). Mood, anxiety and substance use disorders are furthermore associated with working conditions and work performance (48,101).

Statistical analyses

All analyses were performed with STATA version 12.1, using weighted data to correct for differences in the response rates in several sociodemographic groups at both waves and differences in the probability of selection of respondents within households at baseline. Robust standard errors were calculated in order to obtain correct 95% confidence intervals and p-values (114).

First, the presence of four categories of number of BPD symptoms among this working population were calculated (0, 1-2, 3-4, and $\geq$ 5 symptoms). People with $\geq$ 5 BPD symptoms can be viewed as suffering from BPD, since they fulfil the required number of DSM-IV criteria (at least 5 out of 9) for a BPD diagnosis (9).

Second, the mean number of BPD symptoms in sociodemo-graphic characteristics and 12-months common mental disorders were calculated using simple descriptive analyses to study potential confounders.

Third, multivariate linear and multinomial logistic regression analyses were performed to study the association between BPD symptoms and type and number of adverse working conditions. In the first series of analyses, adjustments were made for sex and age. In the second series of analyses, additional adjustments were made for education, living situation, any 12-month mood disorder, any 12-month anxiety disorder, and any 12-month substance use disorder.

Fourth, multivariate multinomial logistic regression analyses were performed to study the association between BPD symptoms with work performance. Work performance was categorized as having 0, 0.1-5 or > 5.1 days of work loss, and the reference category in these analyses consisted of those who reported 0 work loss days in the past month. Again, in the first series of analyses, adjustments were made for sex and age. In the second series of analyses, additional adjustments were made for education, living situation, any 12-month mood disorder, any 12-month anxiety disorder, and any 12-month substance use disorder. In the third series of analyses, the association of BPD symptoms and work performance was additionally adjusted for type or number of adverse working conditions to study the association between BPD symptoms and work performance mediated by type or number of adverse working conditions. Two-tailed testing procedures were used with 0.05 alpha levels in all analyses.

RESULTS

Number of BPD symptoms

In this community-based sample of 3,672 working people, 72.8% had no symptoms of BPD, 23.8% had 1-2 symptoms, 2.7% had 3-4 symptoms, and 0.7% had $\geq$ 5 symptoms (mean 0.45 (SE=0.02)) (not in table). Younger age, lower education, living without a partner and the co-occurrence of any CMD were significantly associated with a higher number of BPD symptoms (Table 1).

Working conditions

The adjusted associations between BPD symptoms and working conditions are summarized in Table 2. BPD symptoms were associated with less decision latitude, less job security and less co-worker support. These associations persisted after adjustment for sociodemographic characteristics and CMD's (Table 2, Model 2). Higher number of BPD symptoms was incrementally associated with poorer job quality, indicated by a higher number of adverse working conditions. The strength of these associations attenuated slightly in the model incorporating all covariates (Table 2, Model 2).

Table 1. Sociodemographic characteristics among workers (N=3,672).

	Total working population		BPD symptoms (0-6)	
	n	**%**	**Mean**	**P-value**
Total	3672	100	0.45	
Sex				**0.27**
Male	1831	56.4	0.43	
Female	1841	43.6	0.48	
Age				**0.002**
21-37	999	36.0	0.52	
38-47	1187	29.2	0.45	
48-57	1033	25.6	0.40	
58-64	453	9.2	0.34	
Education				**<0.0001**
Lower secondary	859	24.1	0.58	
Higher secondary	1272	42.7	0.44	
Higher professional/ University	1541	33.2	0.37	
Living situation				**<0.0001**
with partner	2676	71.9	0.40	
without partner	996	28.1	0.59	
Any 12-month common mental disorder				
Mood disorder				**<0.0001**
No mood disorder	3516	95.4	0.40	
Any mood disorder	156	4.6	1.59	
Anxiety disorder				**<0.0001**
No anxiety disorder	3486	94.0	0.41	
Any anxiety disorder	186	6.0	1.19	
Substance use disorder				**0.001**
No substance use disorder	3565	96.0	0.42	
Any substance use disorder	107	4.0	1.19	

Significant associations highlighted in bold.

Table 2. Borderline personality disorder (BPD) symptoms as a correlate of working conditions among workers (N=3,672).

Type of working condition	n	mean	BPD symptoms	
			Adj. coefficient [95% CI] Model 1	Adj. coefficient [95% CI] Model 2
Decision latitude (24 − 96)	3661	74.25	**-1.26 [-1.75- -0.76]**	**-0.75 [-1.26- -0.25]**
Psychological job demands (12 − 48)	3657	30.43	0.13 [-0.12-0.37]	0.19 [-0.08-0.45]
Job security (3 - 10)	3635	8.54	**-0.18 [-0.25- -0.12]**	**-0.15 [-0.22- -0.08]**
Co-worker support (4 − 16)	3338	12.33	**-0.09 [-0.16- -0.02]**	**-0.07 [-0.14- -0.002]**
Number of adverse working conditions	**n**	**%**	Adj. RRR [95% CI] Model 1	Adj. RRR [95% CI] Model 2
0 (optimal)	1487	40.5	Ref	Ref
1	1394	38.2	**1.15 [1.02-1.29]**	1.08 [0.96-1.21]
2	572	16.3	**1.39 [1.21-1.59]**	**1.29 [1.11-1.49]**
3 or more	179	5.0	**1.64 [1.41-1.90]**	**1.41 [1.19-1.66]**

Adj: Adjusted. CI: Confidence interval. RRR: Relative Risk Ratios.
Ref: Reference category (no adverse working conditions).
Model 1: Adjusted for sex and age.
Model 2: Adjusted for sex, age, education, living situation,
any 12-month mood disorder, any 12-month anxiety disorder,
any 12-month substance use disorder.
Significant associations highlighted in bold.

Work performance

BPD symptoms among workers were associated with impaired work performance, assessed in total work loss days. The mean of total work loss days was 2.0 (SE=0.1) (not in table). The number of BPD symptoms was consistently associated with impaired work performance, in both categories of work loss (0.1 – 5 and > 5.1 days), also after adjustment for sociodemographic characteristics, CMD and type or number of adverse working conditions (Table 3 and 4, Model 3).

Table 3. BPD symptoms among workers (N=3,672) and type of working conditions as correlates of impaired work performance.

Work loss days	0 days	0.1 - 5 days		
		Model 1 Adj. RRR [95% CI]	Model 2 Adj. RRR [95% CI]	
BPD symptoms (0-6)	Ref	**1.25 [1.13-1.38]**	**1.20 [1.08-1.34]**	
Type of working condition				
Decision latitude (24-96)	Ref	1.00 [0.99-1.01]	0.99 [0.98-1.01]	
Psychological job demands (12-48)	Ref	1.00 [0.98-1.03]	1.00 [0.98-1.02]	
Job security (3-10)	Ref	**0.85 [0.78-0.92]**	**0.86 [0.80-0.94]**	
Co-worker support (4-16)	Ref	0.97 [0.91-1.03]	0.96 [0.90-1.02]	

Adj: Adjusted. CI: Confidence interval. RRR: Relative Risk Ratios.
Ref: Reference category (0 days of work loss).
Model 1: adjusted for demographic variables sex and age,
Model 2: adjusted for sex, age, living situation, education and any 12-month mood disorder, any 12-month anxiety disorder and any 12-month substance use disorder,
Model 3: adjusted for model 2 as well as all variables in the column (BPD symptoms and the four working conditions).
Significant associations highlighted in bold.

		> 5.1 days		
	Model 3 Adj. RRR [95% CI]	Model 1 Adj. RRR [95% CI]	Model 2 Adj. RRR [95% CI]	Model 3 Adj. RRR [95% CI]
	1.14 **[1.00-1.28]**	**1.36** **[1.22-1.51]**	**1.21** **[1.07-1.37]**	**1.16** **[1.02-1.33]**
	1.00 [0.99-1.01]	**0.98** **[0.97-1.00]**	**0.99** **[0.97-1.00]**	0.99 [0.98-1.00]
	1.00 [0.97-1.02]	**1.04** **[1.01-1.06]**	**1.04** **[1.01-1.06]**	**1.03** **[1.00-1.06]**
	0.86 **[0.79-0.93]**	**0.83** **[0.76-0.91]**	**0.85** **[0.78-0.94]**	**0.88** **[0.80-0.97]**
	0.98 [0.92-1.05]	0.95 [0.88-1.03]	0.96 [0.88-1.05]	1.00 [0.92-1.10]

In the model that included both BPD symptoms and each of adverse working conditions separately (Table 3, Model 3), we found that job insecurity was significantly associated with 0.1 - 5 work loss days compared to 0 work loss days. Decision latitude, psychological job demands and job security were significant-ly associated with > 5 work loss days compared to 0 work loss days, after controlling for sociodemographic characteristics and CMD (Table 3). After additionally controlling for the other types of working conditions and BPD symptoms (Table 3, Model 3), the significant association with decision latitude disappeared. Those reporting 3 or more adverse working conditions had higher risk of impaired work performance compared to workers with no adverse working conditions, decreasing slightly per model incorporating more covariates (Table 4, Models 2 and Models 3). Furthermore, in all models the number of BPD symptoms was significantly associated with impaired work performance, inde-pendent of type or number of adverse working conditions and any concurrent CMD.

Table 4. BPD symptoms among workers (N=3,672) and number of adverse working conditions as correlates of impaired work performance.

Work loss days	0 days	0.1 - 5 days		
		Model 1 Adj. RRR [95% CI]	Model 2 Adj. RRR [95% CI]	
BPD symptoms (0-6)	Ref	**1.25 [1.13-1.38]**	**1.20 [1.08-1.34]**	
Number of adverse working conditions				
0 (optimal)	Ref	Ref	Ref	
1	Ref	1.26 [0.95-1.68]	1.21 [0.89-1.63]	
2	Ref	1.41 [0.97-2.04]	1.43 [0.97-2.11]	
3 or more	Ref	**2.68 [1.55-4.65]**	**2.49 [1.48-4.18]**	

Adj: Adjusted. CI: Confidence interval. RRR: Relative Risk Ratios.
Ref: Reference category (0 days of work loss) in the multinomial analyses and in the row (0 adverse working conditions).
Model 1: adjusted for demographic variables sex and age,
Model 2: adjusted for sex, age, living situation, education and any 12-month mood disorder, any 12-month anxiety disorder and any 12-month substance use disorder,
Model 3: adjusted for model 2 as well as all variables in the column (BPD symptoms and the four working conditions).
Significant associations highlighted in bold.

		> 5.1 days		
	Model 3 Adj. RRR [95% CI]	Model 1 Adj. RRR [95% CI]	Model 2 Adj. RRR [95% CI]	Model 3 Adj. RRR [95% CI]
	1.17 [1.04-1.31]	**1.36 [1.22-1.51]**	**1.21 [1.07-1.37]**	**1.19 [1.04-1.35]**
	Ref	Ref	Ref	Ref
	1.20 [0.88-1.63]	1.29 [0.99-1.70]	1.23 [0.93-1.63]	1.22 [0.92-1.63]
	1.39 [0.94-2.05]	**1.69 [1.16-2.46]**	**1.54 [1.07-2.23]**	**1.49 [1.04-2.15]**
	2.38 [1.41-4.01]	**2.64 [1.64-4.26]**	**2.21 [1.36-3.60]**	**2.11 [1.30-3.43]**

DISCUSSION

To our knowledge, this is the first study examining the interplay between BPD symptoms and working conditions as a pathway for work performance in a general population sample. Although the actual number of people with fully developed BPD in the general population is relatively small (in this sample 0.7%), the present study shows that lower number of BPD symptoms are both common and associated with impaired work performance, independent of the type or number of adverse working conditions and concurrent CMD. After adjustment for CMD, the number of BPD symptoms was significantly associated with low decision latitude, job insecurity and low co-worker support, however not with psychological job demands.

We hypothesized that the effect of BPD symptoms could contribute to adverse working conditions. As expected, the number of BPD symptoms was associated with decision latitude, even after adjustment for CMD. The relation with decision latitude could be explained by difficulties in decision-making and controlling of impulses in persons with BPD (102,103), which may result in feelings of low control.

Contrary to our hypothesis, the association between BPD symptoms and psychological job demands was not significant. Despite the association between BPD and higher stress levels both in employment (115) and in general, showing more intense states of aversive tension compared to healthy controls (116). However, the relation showed an expected increase of psychological job demands, this was not significant.

As anticipated, the number of BPD symptoms was associated with job insecurity. Individuals with BPD symptoms are associated with dismissal and demotion (3,99), which possibly increases

the fear of losing a job. Furthermore, data collection took place during times of economic crises, which naturally increases job insecurity. Nevertheless, it is still conceivable that job insecurity also contributes to deterioration of mental health (48).

As expected, BPD symptoms were negatively related to co-worker support. Interpersonal problems, which are a core symptom of BPD, are likely to arise as conflicts at work (3,104,115). Individuals with BPD symptoms are less capable of reporting accurately on their experiences or on the effect of their behaviour upon others (99,117). Moreover, it is conceivable that individuals with BPD symptoms underestimate the effect of their behaviour, which can lead to conflicts and less co-worker sup-port. However, the JCQ questions are fairly straightforward and minimise the potential of inaccurately reporting on this working condition.

We found that BPD symptoms were associated with impaired work performance, regardless of (adverse) working conditions and concurrent CMD. Our study confirms previous findings that psychopathology is associated with impaired work performance (30). However, as this is the first study that simultaneously eval-uates (adverse) working conditions and BPD symptoms on work performance, comparison with other studies was not possible.

Using a population-based approach allowed us to study the associations between BPD symptoms and work performance with less risk of selection bias and a greater generalizability than clinical studies. Nevertheless, a number of limitations must be considered. Our findings are cross-sectional and, therefore, it is impossible to draw any causal relationships. Although the idea that BPD symptoms contribute to adverse working conditions and subsequently impair work performance is plausible, it is

also possible that adverse working conditions contribute to an increase in symptoms, as has previously been shown for CMD (48,74,118). We were able to test a number of working conditions, however other domains of working conditions may be relevant which we were unable to study. Examples are downsizing in companies, procedural and organizational injustice, exposure to (sexual) violence and threats and role conflicts (119).

CONCLUSIONS
We conclude that BPD symptoms are significantly associated with impaired work performance, independent of adverse working conditions and concurrent CMDs. Working conditions also impacted on work performance, specifically job insecurity and more than 3 adverse working conditions. Longitudinal studies are warranted to study the causal relationships between BPD symptomatology, working conditions and work performance. The present findings suggest that future studies should examine interventions aimed at diminishing BPD symptoms and coping with or changing of working conditions to subsequently reduce impaired work performance.

Author disclosures

Competing interests
Author JRA is a co-opted member of the guideline authorisation group for the Dutch Occupational Medicine guidelines and is member of the advisory board of the Dutch Board for Occupational Medicine. He is president of the Work disability Prevention and Integration committee of the International Commission on Occupational Health (ICOH). He is chair of the Dutch research Centre for Insurance Medicine. He is chair of the Complaints board for disputes on Pre-employment medical examinations of the Dutch Socio-economic Council. He is editor the international handbook of Work disability is shareholder of Evalua Netherlands LtD stocks. All authors declare they have no competing interests.

Chapter 3

The role of borderline personality disorder symptoms on absenteeism & work performance in the Netherlands Study of Depression and Anxiety (NESDA)

Trees Juurlink
Femke Lamers
Hein van Marle
Han Anema
Aartjan Beekman

ABSTRACT

Symptoms of borderline personality disorder (BPD) were previously found to be associated with decreased work performance, even after controlling for depressive and anxiety disorders. Furthermore, co-occurrence of BPD and affective disorders is common. Therefore, we examined the effect of BPD symptoms on occupational functioning in workers with affective disorders.

Healthy workers (n=287), workers with current depression/anxiety only (n=195), workers with BPD symptoms only (n=54), and workers with both depression/anxiety and BPD symptoms (n=103) were selected from the Netherlands Study of Depression and Anxiety (NESDA). Both a categorical and dimensional approach were used to cross-sectionally study the effect of BPD symptoms on work performance and absenteeism.

Compared to healthy controls, all symptomatic groups had impaired occupational functioning. Workers with current depression/anxiety had higher long-term absenteeism (OR=3.59; 95%CI:1.83-7.02) and impaired work performance (OR=7.81; 95%CI:4.44-13.73), workers with BPD symptoms only had higher impaired work performance (OR=6.02 95%CI:2.76-13.09), and workers with both depression/anxiety and BPD symptoms had higher long-term absenteeism (OR=3.66 95%CI:1.69-7.91) and impaired work performance (OR=10.41 95%CI:5.38-20.15). No difference was found between the (symptomatic) groups. In the dimensional analysis, all associations between BPD symptoms and occupational measures disappeared when depressive symptoms were added. Depressive and BPD symptoms were highly correlated (r=.67).

Our findings confirm that both affective disorders and BPD symptoms are associated with occupational dysfunction. The effect of BPD symptoms however, seems mediated by depressive symptoms. This would suggest that focusing on affective symptoms in occupational health may be effective to improve occupational functioning in persons with BPD.

INTRODUCTION

Borderline personality disorder (BPD) is a mental illness charac-
terized by instability in interpersonal relationships, self-image,
emotion regulation and impulse control (120). BPD is furthermore
associated with suicidal behaviour, severe functional impairment
and high rates of comorbid mental disorders (120). The preva-
lence of BPD is estimated to vary between 0.5% and 1.4% in the
general population (23,26,44,121,122). In clinical populations
prevalence estimates vary between 10% of outpatients to 25% of
inpatients (120,123). Although BPD symptoms respond to treat-
ment and naturally decrease over time, occupational functioning
often remains severely impaired in patients with BPD irrespective
of clinical symptom remission (124,125).

   In the Netherlands, a dose-response relationship was found
between increasing number of BPD symptoms and unemploy-
ment. Of those with 1-2 BPD symptoms 25.6% were unemployed
up to 47.4% of those with $\geq$5 symptoms (the threshold for clinical
BPD diagnosis) (26). However, when examining workers in the
general Dutch population, we found that symptoms of BPD
were associated with impaired work performance, even after
controlling for common mental disorders (CMD) (126). This
demonstrates the negative impact of BPD symptoms on work
performance. In workers with BPD, occupational dysfunction is
found to be related to relational conflicts with supervisors and
co-workers, high sensitivity to criticism, ineffective task strategies
and avoidance of certain tasks and procrastination (49,127,128).
In addition, the BPD symptom-domains impulsivity and affective
instability were associated with diminished academic achieve-
ment (129).

   Decreased work performance and unemployment in BPD

lead to considerable societal costs (7,124). It has been suggested that the total societal costs related to BPD are largely attributable to productivity loss (130). Furthermore, unemployment related costs in BPD exceed those in mood and anxiety disorders (18,31,33,34,131) due to a larger employment gap. This suggests that indirect costs of BPD are higher than those for affective disorders. However, only a limited number of studies on occupational functioning take BPD into account. Instead the majority of studies focuses on other, more common mental disorders, such as mood and anxiety disorders (29,30,132,133). BPD and affective disorders however, very often co-occur, emphasising the necessity to investigate how both domains of psychopathology interact in their effects on occupational functioning (26,131,134). Disregarding BPD, may for instance lead to an overestimation of the effects of depression and anxiety.

Therefore, the primary aim of the present study was to examine the association of BPD with absenteeism and work performance, as measures of occupational functioning, in workers with and without affective disorders as assessed in the Netherlands Study of Depression and Anxiety (NESDA). We looked at BPD using both categorical (likely diagnosis) and dimensional (severity of symptoms) levels of case-ness and also considered specific domains of BPD pathology (affective instability, identity problems, negative relationships and self-harm as continuous measures). Given the previously found association between impaired work performance and BPD symptoms in workers from the general population, we hypothesize that impaired work performance in individuals with affective disorders is partly explained by their BPD symptoms.

METHODS

Study population

For this study we used data of the 6-year follow up assessment from the Netherlands Study of Depression and Anxiety (NESDA). This is a longitudinal, naturalistic cohort study designed to investigate the course and consequences of depressive and anxiety disorders (n=2981) (135). Participants, aged 18 to 65 years, with a current or past anxiety and/or depressive disorder, and healthy controls were recruited from the community, primary care and specialized mental health care. The presence of depressive or anxiety disorders was determined using the DSM-IV based Composite International Diagnostic Interview (CIDI, version 2.1). Exclusion criteria for the study were: 1) being insufficiently fluent in Dutch, and 2) having been diagnosed with a primary clinical diagnosis of a psychotic disorder, obsessive compulsive disorder, bipolar disorder or severe addiction disorder. For the rationale, objectives and methods of NESDA see Penninx et al. (135). The NESDA study protocol was approved by the Ethical Review Board of all participating centres (reference no. 2003/183) and all participants provided informed consent. Data of the 6-year assessment (n=2256 (75.7%)) was used for the current study, as this was the wave in which the Personality Assessment Inventory (PAI-BOR) was included in the assessment (n=2143). For the present study, we selected participants with (i) PAI-BOR data, and in line with a previous study, who reported to be (ii) in a paid job of more than 8h per week (47). These participants could be in sickness benefits, but individuals performing voluntary work or on maternity leave were excluded, resulting in a total study sample of 637 participants.

MEASURES

Depression and anxiety diagnoses

For the assessment of DSM-IV diagnoses of depressive and anxiety disorder the CIDI lifetime interview, version 2.1 was used (136). Current diagnoses (past 6 months) of depressive disorders (major depressive disorder and dysthymic disorder) and anxiety disorders (social phobia, panic disorder (with and without agoraphobia) and generalized anxiety disorder (GAD)) were used. Severity of depressive symptoms (last week) was assessed by means of the 30-item Inventory for Depressive Symptomatology (IDS) questionnaire (137) and used as a continuous variable. Internal consistency of the IDS in NESDA was previously found to be good (Cronbach's α=0.91) (138). Severity of anxiety symptoms (last week) was assessed by means of the 21-item Beck Anxiety Inventory (BAI), (139), also used as a continuous variable. Internal consistency of the BAI in NESDA was previously found to be good (Cronbach's α=0.94) (138).

Borderline personality disorder symptoms

For the assessment of BPD symptoms, the 24-item self-report Personality Assessment Inventory (PAI-BOR) was used (140). Internal consistency of the Dutch version of the PAI-BOR is good (Cronbach's α=0.81) (141). The PAI-BOR consists of four subscales, with six items each on four-point rating scales ranging from 0 (false) to 3 (very true). The subscale affective instability (BOR-A α=0.74) examines the tendency to switch between negative and positive affect, specifically in response to the interpersonal environment. The subscale identity problems (BOR-I α=0.71) measures the consistency of self-identity. The subscale negative relationships (BOR-N α=0.63) refers to the propensity of

involvement in intense and unstable relationships. The subscale self-harm (BOR-S α=0.68) examines the tendency of impulsive or self-damaging behaviour.

According to the PAI-BOR manual a total score, based on all subscales, can be calculated (BOR-TOT, α=0.87). A total score of <59 reflects an average score, a total score from 60 to 69 reflects an elevated score and a total score of >70 reflects significant BPD symptoms (140). A score of significant BPD symptoms in combination with above average scores on the PAI-BOR subscales suggests that a DSM-5 BPD diagnosis is highly likely (140).

The Dutch translation of the PAI-BOR was found to discriminate well between those with significant BPD features and those with a relative absence of BPD features (141). In previous studies, incremental validity was shown for the PAI-BOR in a population sample (142), and concurrent validity was found in assessing patients with SCID-II BPD diagnoses (143). According to the PAI-BOR manual a total score, based on all subscales, can be calculated (BOR-TOT, α=0.87). A total score of <59 reflects an average score, a total score from 60 to 69 reflects an elevated score and a total score of >70 reflects significant BPD symptoms. A score of significant BPD symptoms in combination with above average scores on the PAI-BOR subscales suggests that a DSM-IV BPD diagnosis is highly likely (134,140,141).

Occupational functioning

In line with Plaisier et al. (144), occupational functioning was conceptualized in terms of absenteeism and work performance. These were assessed with the Health and Labour Questionnaire Short Form (SF-HLQ) of the TiC-P (Trimbos/iMTA Questionnaire for costs associated with Psychiatric Illnesses) (145). The

TiC-P has been widely used in large population studies and has good validity and reliability (29,146). Absenteeism was based on self-report and expressed by the number of weeks absent from work in the last 6 months. This was computed by dividing the number of days absent from work by the number of workdays a person was supposed to work. Absenteeism was not normally distributed, most participants reported not being absent. In line with previous work on absenteeism, it was categorized into three categories: no absenteeism, short-term absenteeism (<2 weeks in last 6 months) and long-term absenteeism (>2 weeks in last 6 months) (144,147,148). Also, this cut-off between short-term and long-term absenteeism was used to represent a sensible distinction between short-term absenteeism more likely to be due to common health conditions, such as colds and flu, compared to long-term absenteeism which is more likely due to chronic conditions.

Work performance was based upon two self-report questions of the TiC-P: 1) "On how many days during the last 6 months did you perform paid work, although you were bothered by health problems?", and 2) "Please rate how well you performed on the days you went to work even though you were suffering from health problems" on a 10-point scale (ranging from 0.0= maximally inefficient to 1.0= efficient as usual). Work performance was not normally distributed. In line with previous research, work performance was computed based on the following formula (47,149,150):

$$work\ performance = \frac{no.days\ hindered*(1-efficiency)*work\ hours\ per\ day}{no.work\ hours\ per\ week}$$

A higher outcome indicates more decreased work perfor-
mance. This variable ranged from 0-39.8 and was not normally
distributed. Therefore, in line with previous research, work perfor-
mance was categorized in no impairment (0 days), reduced work
performance (>0-1.68 days), and impaired work performance
(>1.68 days) (35,41,42). Again, the cut-off represents a sensible
distinction between reduced and impaired work performance.

Covariates
In line with previous research on occupational functioning (47)
putative confounding variables were gender, age, education (in
years), the number of working hours per week, and the number
of ever experienced self-reported somatic conditions consisting
of the sum of heart diseases, diabetes, stroke, arthritis, cancer,
hypertension, intestinal problems, liver disease, epilepsy, chronic
lung problems, allergy and injuries.

Statistical analyses
To examine absenteeism and work performance related to
BPD we used two approaches, a categorical and a dimensional
approach. For the categorical approach, we first defined likely
BPD diagnosis based on the PAI-BOR (significant BPD symptoms
and above average scores on all subscales). We then composed
4 groups: (1) Healthy controls (no lifetime depression/anxiety
and no likely BPD diagnosis), (2) Current depression/anxiety and
no likely BPD diagnosis, (3) likely BPD diagnosis without cur-
rent depression/anxiety, and (4) Current depression/anxiety and
likely BPD diagnosis. Differences in socio-demographics and
work-related outcomes between the 4 groups were examined
using analyses of variance (ANOVA) for continuous variables, chi-

square statistics for categorical variables, and Kruskal-Wallis for non-parametric variables. For the dimensional approach, we used the PAI-BOR total score.

Multinomial logistic regression was performed to test the associations between the diagnostic group (categorical predictor) and absenteeism and work performance (outcomes), while additionally controlling for covariates (Model 1). Also, absence ratio based on the number of absent workweeks was added as a covariate in the analyses of work performance, because for those reporting absence, fewer days had to be left out to assess actual work performance (35). Odds ratios and 95% confidence intervals were calculated for short-term and long-term absenteeism compared to no absenteeism, and for decreased and impaired work performance compared to no change in work performance.

The analyses were repeated with BPD symptoms (dimensional) as a predictor. In these analyses, the associations with absenteeism and work performance with the four PAI-BOR domains (affective instability, identity problems, negative relationships and self-harm) were also analysed. Next, we extended the models including severity of depression and anxiety to see if effects of BPD symptoms were independent of depression and anxiety (Model 2). Severity of anxiety symptoms (BAI) was highly correlated with severity of depressive symptoms (IDS) (r=.76), and was therefore omitted from the analyses. Data was analysed using SPSS 22.0 and statistical significance was set at $p \leq .05$

RESULTS

Sample description
Of the 637 workers included, 287 (45.0%) had no current depressive/anxiety disorder or likely BPD diagnosis, 195 (30.5%) had current depressive/anxiety disorder and no likely BPD diagnosis, 54 (8.4%) had likely BPD diagnosis without current depressive/anxiety disorder, and 103 (16.1%) workers had both current depressive/anxiety disorder and likely BPD diagnosis. Education in years, number of working hours and number of somatic diseases differed significantly across groups (Table 1).

Table 1. Demographics, health characteristics and work outcomes in workers (n = 637) by diagnostic group.

	Healthy controls (n=287)	Current depressive/anxiety disorder and no likely BPD diagnosis (n=195)
Sex, % female	57.5	67.2
Age, mean in years (SD)	43.8 (12.6)	44.5 (10.4)
Education, mean in years (SD)	14.1 (3.1)	13.3 (3.3)
Working hours, mean no. hours per week (SD)	32.8 (9.4)	30.4 (10.4)
Number of somatic diseases, median (IQR)	0.0 (0.0-1.0)	0.0 (0.0-1.0)
Work absenteeism, median (IQR)	0.0 (0.0-1.0)	1.0 (0.0-1.0)

Work absenteeism (%)
  No absence
  Short-term absence
  Long-term absence
	67.9
	26.5
	5.6
		49.7
		32.8
		17.4

Work performance rate, median (IQR)	0.0 (0.0-0.0)	1.0 (0.0-2.0)

Work performance rate (%)
  No changed work performance
  Reduced work performawnce
  Impaired work performance
	76.3
	15.7
	8.0
		36.4
		29.7
		33.8

Severity of depressive symptoms (IDS scores), mean (SD)	4.8 (4.0)	20.0 (9.8)
Severity of anxiety symptoms (BAI scores), mean (SD)	2.4 (3.0)	12.1 (8.2)
DSM-IV BPD diagnosis is highly likely (%)	0.0	0.0

[a] Based on ANOVA for continuous, chi–square for dichoto-mous and Kruskal–Wallis for non–parametric variables. Significant p–values highlighted in bold.

Likely BPD diagnosis without current depressive/ anxiety disorder (n=54)	Current depressive/ anxiety disorder + likely BPD diagnosis (n=103)	p-value[a]
59.3	62.1	0.19
42.7 (11.2)	43.3 (10.9)	0.71
12.3 (3.3)	12.0 (3.4)	**<0.001**
31.8 (9.0)	31.2 (9.5)	**0.048**
0.0 (0.0-1.0)	1.0 (0.0-1.0)	**0.007**
0.0 (0.0-1.0)	0.0 (0.0-1.0)	
53.7 35.2 11.1	52.4 28.2 19.4	**<0.001**
1.0 (0.0-2.0)	1.0 (0.0-2.0)	
46.3 22.2 31.5	32.0 26.2 41.7	**<0.001**
23.0 (8.2)	27.5 (10.9)	**<0.001**
12.5 (7.8)	16.8 (10.9)	**<0.001**
37.0	38.8	**<0.001**

Relation between psychopathology and absenteeism and work performance

In the categorical approach, absenteeism and work performance differed significantly across groups. Table 1 shows that the lowest rates of absenteeism and impaired work performance were found in the control group, followed by the likely BPD diagnosis without current depressive/anxiety disorder group. The current depressive/anxiety disorder and no likely BPD diagnosis and the group with both current depressive/anxiety disorder and likely BPD diagnosis showed the highest rates on absenteeism and impaired work performance. There were no differences between the (symptomatic) groups.

The adjusted associations between absenteeism and work performance in the three subgroups compared to the healthy control group are shown in Table 2. The depression & anxiety only group was significantly associated with both short-term (OR=1.76; 95%CI:1.15-2.69) and long-term absenteeism (OR=3.59; 95%CI:1.83-7.02). The group with depression & anxiety and BPD diagnosis likely was significantly associated with long-term absenteeism (OR=3.66; 95%CI:1.69-7.91). Although the OR for especially short-term absenteeism was not much different from the ORs in other groups, the BPD only group was not significantly associated with absenteeism (short-term absenteeism OR=1.80; 95%CI:0.93-3.47, and long-term absenteeism OR=2.04; 95%CI:0.71-5.87). In post-hoc analysis comparing the BPD only group with the other case groups, no significant differences were observed.

Table 2. Multinomial logistic regression between group and absenteeism and work performance in workers (n=637).

Absenteeism	Short-term absenteeism[b]		Long-term absenteeism[b]	
	OR (95% CI)	p	OR (95% CI)	p
D/A only[a]	1.76 (1.15-2.69)	**0.01**	3.59 (1.83-7.02)	**<0.001**
BPD symptoms only[a]	1.80 (0.93-3.47)	0.08	2.04 (0.71-5.87)	0.19
D/A + BPD symptoms[a]	1.51 (0.87-2.61)	0.14	3.66 (1.69-7.91)	**0.001**

Work performance	Reduced work performance[c]		Impaired work performance[c]	
	OR (95% CI)	p	OR (95% CI)	p
D/A only[a]	3.95 (2.42-6.42)	<0.001	7.81 (4.44-13.73)	**<0.001**
BPD symptoms only[a]	2.29 (1.05-4.98)	**0.04**	6.02 (2.76-13.09)	**<0.001**
D/A + BPD symptoms[a]	3.83 (2.05-7.17)	**<0.001**	10.41 (5.38-20.15)	**<0.001**

[a] Reference category: Control group
[b] Reference category: No absenteeism
[c] Reference category: No impaired work performance
Adjusted for covariates: sex, age, education, number of somatic diseases and working hours; and additionally absence in the model for reduced and impaired work performance
Significant p–values highlighted in bold.

With respect to work performance, the depression & anxiety group with likely BPD diagnosis (OR=10.41; 95%CI:5.38-20.15), the depression & anxiety only group (OR=7.81; 95%CI:4.44-13.73), and the group with likely BPD diagnosis only (OR=6.02; 95%CI:2.76-13.09) were significantly associated with impaired work performance. Again, comparison of the BDP with other case groups did not reveal differences between the groups.

Concerning the dimensional approach, Table 3 shows the associations between the dimensional BPD score and BPD domains with absenteeism and work performance. BPD symptoms were significantly associated with long-term absenteeism (OR=1.03; 95%CI:1.00-1.05) in model 1. The BPD domain affective instability was associated with both short-term (OR=1.06; 95%CI:1.01-1.10), and long-term absenteeism (OR=1.08; 95%CI:1.01-1.15). However, when adding severity of depression to model 2, the associations between BPD symptoms and affective instability with absenteeism disappeared. In this model, only severity of depression was associated with long-term absenteeism (OR=1.05; 95%CI:1.02-1.07). BPD symptoms, affective instability, identity problems and negative relationships were all significantly associated with both reduced and impaired work performance in model 1. In addition, self-harm was significantly associated with impaired work performance. However, again in model 2 when adding severity of depression, all significant associations disappeared except for severity of depression with reduced and impaired work performance, and affective instability with reduced work performance (OR=1.08; 95%CI:1.00-1.16).

Table 3. Multinomial logistic regression between borderline personality symptoms (continuous) and absenteeism and work performance in workers (n=637).

Absenteeism	Short-term absenteeism[a]		Long-term absenteeism[a]	
	OR (95% CI)	p	OR (95% CI)	p
Model 1				
Borderline personality disorder symptoms	1.02 (1.00-1.03)	0.052	1.03 (1.00-1.05)	**0.03**
Affective Instability	1.06 (1.01-1.10)	**0.02**	1.08 (1.01-1.15)	**0.02**
Identity Problems	1.03 (0.99-1.08)	0.18	1.06 (0.99-1.14)	0.07
Negative Relationships	1.05 (0.99-1.10)	0.09	1.05 (0.97-1.12)	0.22
Self-harm	1.03 (0.96-1.10)	0.49	1.08 (0.99-1.19)	0.09
Model 2				
Borderline personality disorder symptoms	1.00 (0.98-1.02)	0.94	0.99 (0.96-1.03)	0.65
Severity of depression	1.02 (0.98-1.04)	0.08	1.05 (1.02-1.07)	**0.003**
Affective Instability	1.02 (0.96-1.09)	0.51	0.99 (0.91-1.09)	0.88
Identity Problems	0.97 (0.91-1.04)	0.42	0.95 (0.86-1.04)	0.27
Negative Relationships	1.01 (0.95-1.07)	0.72	0.97 (0.89-1.06)	0.52
Self-harm	1.00 (0.92-1.07)	0.91	1.03 (0.94-1.14)	0.53

Work performance	Reduced work performance		Impaired work performance	
	OR (95% CI)	P	OR (95% CI)	P
Model 1				
Borderline personality disorder symptoms	1.04 (1.02-1.06)	**<0.001**	1.07 (1.05-1.09)	**<0.001**
Affective Instability	1.15 (1.09-1.21)	**<0.001**	1.21 (1.14-1.28)	**<0.001**
Identity Problems	1.10 (1.04-1.16)	**0.001**	1.22 (1.16-1.30)	**<0.001**
Negative Relationships	1.08 (1.02-1.15)	**0.007**	1.16 (1.09-1.23)	**<0.001**
Self-harm	1.04 (0.96-1.13)	0.35	1.11 (1.03-1.20)	**0.007**
Model 2				
Borderline personality disorder symptoms	1.00 (0.98-1.03)	0.82	1.01 (0.98-1.03)	0.62
Severity of depression	1.05 (1.02-1.08)	**<0.001**	1.09 (1.06-1.12)	**<0.001**
Affective Instability	1.08 (1.00-1.16)	**0.04**	1.03 (0.95-1.11)	0.38
Identity Problems	0.98 (0.90-1.06)	0.54	1.02 (0.95-1.11)	0.58
Negative Relationships	0.99 (0.93-1.06)	0.86	1.01 (0.94-1.08)	0.89
Self-harm	0.97 (0.89-1.06)	0.46	0.99 (0.91-1.08)	0.83

a Reference category: No absenteeism
b Reference category: No impaired work performance
Model 1: Adjusted for covariates: sex, age, education, number of somatic diseases and working hours and absence in the model for reduced and impaired work performance
Model 2: Adjusted for all covariates in Model 1 and severity of depression
Significant p–values highlighted in bold.

Because adding severity of depression to the dimension-al model led to the association between BPD symptoms and absenteeism (and to some extent work performance) becoming non-significant, we calculated Pearson correlations. This revealed modest to strong correlations between depressive symptoms and BPD symptoms total score, and with all subscales of the PAI-BOR (affective instability, identity problems, negative relationships, and self-harm) (p=<0.001) (Table 4). Depressive symptoms were strongly associated with BPD symptoms (r=.67), affective instabil-ity (r=.61), and identity problems (r=.67).

Table 4. Correlations among severity of depressive symptoms, borderline personality disorder symptoms and borderline personality disorder domain variables

	1	2	3	4	5	6	7
1 Depressive symptoms		.67*	.61*	.67*	.48*	.30*	.59*
2 BPD symptoms			.85*	.83*	.82*	.61*	.57*
3 Affective Instability				.64*	.58*	.36*	.58*
4 Identity Problems					.57*	.32*	.50*
5 Negative Relationships						.38*	.47*
6 Self-Harm							.27*
7 Grouping variable							

N=637, * *p* <0.001
BPD: Borderline personality disorder

DISCUSSION

To our knowledge, this was the first study examining the independent effect of BPD (likely) diagnosis and symptom domains on absenteeism and work performance in individuals with (and without) current depression and anxiety. Both BPD and depression and anxiety were associated with impaired occupational functioning, but effects of BPD symptoms in absenteeism and impaired work performance seemed to be mediated by depression/anxiety. The different patient groups (current depression & anxiety with and without likely BPD diagnosis and the likely BPD diagnosis only group) predominantly exhibited reduced and impaired work performance, and to a lesser extent absenteeism compared to healthy controls. BPD symptoms as a dimensional measure were associated with long-term absenteeism and both reduced and impaired work performance. However, these associations disappeared when adding severity of depressive symptoms to the models.

The present study confirms previously found impaired work performance in workers with psychopathology (30,47). This may be explained by the fact that a large part of the present sample consisted of individuals clinically diagnosed with affective disorders. Furthermore, although BPD symptoms were measured at the (non-clinical) symptomatic level, comorbidity of BPD (symptoms) and affective disorders increased impaired work performance as previously reported (131). This coincides with previous studies demonstrating that severity of psychiatric disorders increased impaired work performance (47,151). Although we did not find significant effects for the BPD only group with both short- and long-term absenteeism, effect sizes were comparable to the significant effect sizes in the depressive/anxiety group

with and without likely BPD diagnosis, and no differences were observed when comparing the BPD only group with the other case groups. The BPD only group was relatively small, which may explain the wider confidence intervals for the BPD only group.

Contrary to previous findings (17,126,152), the association with BPD symptoms disappeared when controlling for depressive symptoms. However, the correlation we found between depressive symptoms, BPD symptoms, and the different BPD domains contributes to the literature by showing that comorbidity between depressive disorders and BPD is high and that symptoms overlap (131,134). One of the shared vulnerabilities in individuals with comorbid depression, anxiety, and BPD symptoms is the personality trait neuroticism (153,154). Neuroticism has been shown to be associated with impaired work functioning (40,42,155). Neuroticism is characterized by being easily upset, maladjusted, and not being calm (156), and it has been previously suggested that improving problems solving skills in workers with high neuroticism may diminish their vulnerability to stress (155). Furthermore, costs of neuroticism are found to exceed those of common mental disorders and are to a large extent related to production losses stemming from absenteeism (40). Still, apart from the BPD domains studied, other disorder-specific traits remain which were not examined in the present study, such as impulsivity and hostility in BPD, pessimism in depression, and perfectionism in anxiety (134,155).

To our knowledge and in line with our hypothesis, this study was the first to show that the BPD domains affective instability, identity problems and negative relationships were associated with both reduced and impaired work performance, and self-harm with impaired work performance. Affective instability and

impaired work performance were previously found to be related to diminished academic achievement (129). However, apart from the association between affective instability and reduced work performance, all associations with the separate BPD domains disappeared after adjusting for severity of depressive symptoms.

Limitations

Although the study provided the unique opportunity to examine and compare the association between BPD symptoms, depressive and anxiety disorders with both absenteeism and work performance, there are also limitations. First, the present findings are based on cross-sectional analyses. Consequently, it is not possible to draw any conclusions about causality. Longitudinal studies are needed to assess long-term consequences of diagnosis on occupational functioning and tease out temporal sequences of perceived shared vulnerabilities between BPD symptoms and affective disorders. Second, BPD symptoms in this sample were not examined by means of a clinical interview but by means of a self-report questionnaire. BPD is often under-detected (157–159) and it is therefore conceivable that BPD symptoms were under-recognized in this sample. Misclassification of BPD symptoms might have led to an underestimation of the contribution of BPD symptoms to depressive/anxiety disorders with respect to work performance. Third, absenteeism and work performance were based on self-report. This self-report might not correspond with employer payroll records. However, previously high correspondence was found between self-report and employer payroll records (160). In addition, the reasons for absenteeism and reduced work performance were not assessed and may be biased due to current diagnosis or symptoms. Fourth, adverse work-

ing conditions such as high job demands, low decision latitude, low skill discretion, low social support and low job security are important predictors of occupational dysfunction in both healthy and psychiatric workers (48,155,161) and were not assessed here. Also, type of industry or job and increased pressure of higher labour flexibility by reforming labour market regulation and working arrangements appeal to workers' performance capabilities (161). Other factors of performance or occupational functioning such as job position, information on resignation, dismissal or demotion were unfortunately also not assessed. Fifth, given the objectives of NESDA, the sample is not representative for workers in the general population or workers with BPD, or the entire BPD population. However, NESDA is representative of a population with depressive and anxiety disorders, which is a strength given the aims of our study. Sixth, the NESDA study was originally set up to study course and consequences of depression and anxiety, but not specifically to evaluate the role of BPD symptomatology. Sample sizes between groups differed, however, effect sizes were comparable. Because the original study was not specifically set up to examine work performance and absenteeism in workers with BPD symptoms, the group of workers with BPD symptoms was smaller as compared to the other groups, it is therefore conceivable that a type II error has occurred. Therefore, the results should be interpreted with caution. In general, future cohort studies should include samples of individuals with clinically diagnosed BPD, with efficient sample sizes, with follow-up assessments on measures of absenteeism and work performance, and investigate the role of working conditions on work performance of workers with BPD.

Clinical implications

This study offers insight into the need of a better recognition and support of (any psychiatric) symptoms to reduce impaired work performance. It is known that individuals with psychiatric disorders have difficulty discussing their symptoms and vulnerabilities due to a fear of stigmatization. Therefore, overcoming difficulties in and barriers to work should be integrated in psychiatric treatment as maintaining employment is most likely positively contributing to health and mood. For example, reducing absenteeism could be a clear goal in the treatment plan. Future longitudinal studies should examine the question to what extent mood, anxiety, BPD symptoms, and shared vulnerabilities affect work performance more thoroughly. A more concise examination of which symptoms affect occupational functioning will provide new strategies to support and improve performance in workers with these mental health vulnerabilities and could be incorporated as goals for improvement in a treatment plan.

CONCLUSIONS

The present study confirms that both depressive and anxiety disorders and BPD symptoms are important factors for absenteeism and impaired work performance, and highlights the need to support these individuals in the work process. An important lead for further investigation is that, in the present study, occupational dysfunction in BPD symptoms was mediated by affective symptoms. This might suggest that work impairment in BPD is explained by affective symptoms which could be used to inform clear treatment goals to improve functioning. Despite the limitation of only having access to cross-sectional data, the present findings suggest that it is important to study mood, anxiety and

BPD symptoms in relation to occupational functioning, together with the contribution of negative working conditions as these may provide important implications for strategies to improve occupational functioning in these workers. Therefore, future studies should examine mental health vulnerabilities together with working conditions in close collaboration with mental health and occupational health professionals and stakeholders from the workplace in order to inform strategies aiming to improve occupational functioning.

Author Disclosures

Chapter 4

Barriers and facilitators to employment in borderline personality disorder: A qualitative study among patients, mental health practitioners and insurance physicians

4

Trees Juurlink

Miljana Vukadin

Barbara Stringer

Marjan Westerman

Femke Lamers

Han Anema

Aartjan Beekman

Hein van Marle

ABSTRACT

Borderline personality disorder (BPD) is associated with unemployment and impaired functioning. However, a comprehensive understanding of barriers and facilitators to employment from a multidisciplinary perspective is currently lacking. Therefore, the aim of this qualitative study was to explore barriers and facilitators in gaining and maintaining employment in BPD from the perspectives of patients, mental health practitioners (MHPs) and insurance physicians (IPs).

Fifteen semi-structured interviews were conducted in patients with BPD and two focus groups were carried out among MHPs (n= 7) and IPs (n=6) following a thematic content analysis approach.

All participants described barriers and facilitators relating to three overall themes: characteristics of BPD, stigma, and support to employment. Barriers to employment mainly related to characteristics of BPD, such as low self-image, difficulty posing personal boundaries, difficulty regulating emotions, and lack of structure. MHPs and IPs additionally mentioned externalization and overestimation of competencies on the part of patients. Enhancing emotion regulation and self-reflection by successful treatment was suggested as a facilitator to enhance employment. Increasing collaboration between mental health and vocational rehabilitation services, and increasing knowledge about BPD, were suggested to increase sustainable employment and decrease stigma.

The present findings revealed that both facilitators and barriers are important in gaining and maintaining employment in BPD in which diminishing symptoms, examining stigma and increasing support to employment are key. As a next step, supported employment strategies that follow patient preferences and integrate employment and mental health services, should be studied in the context of BPD.

INTRODUCTION

Borderline personality disorder (BPD) is a severe mental disorder characterized by an enduring and pervasive pattern of instability of interpersonal relationships, self-image and affects, marked by impulsivity and (para)suicidal behaviors (9). In western societies, prevalence estimates range from 1 to 1.5% in the general population (23,44,162) to 10 to 20% in clinical populations (23,120,163). Unemployment and difficulties in gaining and maintaining employment are highly prevalent in BPD and add to social exclusion, and deterioration of physical and mental health (3,17,37,46,99,115). Individuals with BPD however, express a strong wish to gain employment as working contributes to feelings of competence and being 'normal' (164). From a societal point of view, the high costs concerning occupational disability of individuals with BPD provide further reasons to improve employment within this group (33,34,124,131,165–167).

In general, unemployment and disability benefits are common in individuals with mental health disorders (1). Barriers to employment from the perspective of individuals with mental health disorders are stress, stigma, fear of loss of benefits, low expectations, and lack of follow-up support (82,168,169). Lack of collaboration between mental health and vocational rehabilitation services also hampered return to employment (170–173). Furthermore, stigma impedes employment in three ways: (i) fear of disclosure, (ii) negative attitude of employers, and (iii) anticipated stigma (174). Facilitators to employment involve having a work history, and professional support during job search and during employment (85,168,175–177).

With respect to employment in BPD, a review study has showed that roughly 50% of individuals with BPD manage to find

employment (7). However, only 20% of those in employment are capable of maintaining employment and becoming financially independent of social benefits. Jovev & Jackson (115) explain these low rates by showing that BPD patients experience high levels of stress and malfunctioning during work. Furthermore, Sio and colleagues (50) showed that impulsivity in individuals with BPD was associated with poor employment outcomes after 12 months. Moreover, BPD is characterized by a pattern of instability in interpersonal relationships, disturbed self-image and affect, and impulsivity (9,120), which conceivably all result in impaired functioning in employment settings. Another potential barrier to employment that is significant in BPD is stigma (63). Specifically, stigma from mental health care professionals towards BPD is a well-known problem (60,61,178,179). There is currently no literature yet on stigma towards BPD from insurance physicians (IPs). In the Netherlands, IPs are mandated to judge the medico-legal eligibility of claims for a sickness and work disability benefit supplied by the Dutch Social Security Agency (SSA) and provide sociomedical guidance to sickness benefit claimants to return to work. It is known, however, that knowledge-related and atti-tude-related barriers were found to impede IPs guideline adher-ence in mental health (57).

So far, research on gaining and maintaining employment in BPD is scarce, especially research that combines a multidisci-plinary perspective involved in the pathway to work, such as from mental health practitioners and insurance physicians. Further-more, as of yet, the described barriers to employment in BPD do not directly provide strategies to improve practice. Therefore, the main objective of this qualitative study is to explore the barriers and facilitators of gaining and maintaining employment in BPD

in patients, mental health practitioners (MHPs) and insurance physicians (IPs). Qualitatively exploring these factors provides the opportunity to reveal unexpected themes. Subsequently, these factors will be examined in order to assess the needs for vocational rehabilitation strategies (like Individual Placement and Support, IPS) and ultimately increase employment rates in individuals with BPD.

METHODS

Design
A qualitative explorative study using semi-structured interviews in patients and focus groups in MHPs and IPs was performed to collect rich and in-depth data on barriers and facilitators to employment in BPD.

Context
In the Netherlands mental health and vocational rehabilitation are separate services. Although the current dominating vocational rehabilitation method for patients with severe mental illness is IPS, other patient groups typically receive stepwise vocational trajectories, putting more emphasis on assessments of individual competencies and connecting prevocational activities (180).

Most BPD patients that receive (psychotherapeutic) treatment are treated in outpatient clinics. Additionally, patients with BPD can be treated in the multidisciplinary setting of acute mental health (aimed at short-term care instead of cure) or so-called Flexible Assertive Community Treatment (FACT) (providing extensive care through a combination of individual case management and home visits) (181).

Sample and data collection procedures

Patients with BPD
Patients were recruited from an outpatient clinic for personality disorders of a mental health care institution in an urban area of the Netherlands, serving over 200 patients. In order to be eligible for participation, individuals had to be primarily diagnosed with BPD and fluent in Dutch. Participants were invited by an invitation letter from their practitioner explaining the aims of the study. If individuals met inclusion criteria and were willing to participate, they were contacted by the researcher (TJ). The researcher explained the objectives of the study and scheduled an interview. Between March and July 2017, 16 individuals agreed to participate in the study. Interviews were conducted at a time and location convenient for the participants and generally took place at the outpatient clinic within three weeks following participant inclusion. Before the start of the interview, written informed consent was obtained. In this consent, participants also authorized the authors to use clinical characteristics from the DSM diagnoses, predominantly based on SCID interviews. The recruitment of new participants stopped when no new themes emerged from the interviews (182). After approximately 12 interviews no new themes occurred, three more interviews were conducted to ensure saturation. One interview could not be scheduled within the timeframe of data collection, resulting in a total sample size of 15 semi-structured interviews in patients with BPD.

The topic list was designed with the research group using topics from previous studies in employment and mental health in general (85,183,184). The following topics were discussed: experiences with employment, barriers and facilitators to employ-

ment, stigma and disclosure of BPD (see S1 File). The interviews were held with this topic list. During the interviews with patients and in both focus groups we consistently aimed to distinguish the barriers and facilitators originating from BPD from those originating from possible comorbid disorders. The interviews were held by the first author (TJ), female, trained in qualitative research methods. All interviews were audiotaped and transcribed verbatim. The interviews lasted on average 1 hour (range 30 - 105 minutes). Field notes and memos were made for analyzing purposes during and after the interviews. For this manuscript, a native English speaker translated the citations from Dutch.

Mental health care professionals and insurance physicians
To be eligible, both professional groups had to have experience in working with patients with BPD for at least 6 months. For the focus group with MHPs, one member of the research team (HvM), psychiatrist, informed and invited other practitioners from the outpatient clinic. The invitation for participation in the focus group was initially send out to all practitioners working at the outpatient clinic for the specialized treatment of patients with personality disorders consisting of 63 individuals. After obtaining a low response rate, 25 practitioners were approached by email again, but 18 declined due to conflicting appointments or holidays. Seven MHPs were willing to participate in the focus group interview at May 18th 2017 lasting 100 minutes. However, MHPs (and IPs) were asked about their experiences with patients with BPD in general (and thus data was not analyzed as specific patient-professional dyads).

For the focus group with IPs, a member of the research team (JA), insurance physician, invited twelve IPs from a bimonthly

meeting at the SSA. Half of the group declined due to conflicting appointments or maternity leave, however six IPs were able to participate in the focus group interview on June 8th 2017 lasting 95 minutes. Participants were all employed at the SSA, working at different offices in urban areas in the Netherlands. IPs were asked to share their experiences with patients that had a recorded BPD diagnosis by a qualified mental health professional.

At the start of the focus group each participant was asked to write down one word they associated with employment in individuals with BPD on a memo to provoke conversation about (different) perspectives. The memos were pasted on a white-board and each participant was invited to explain their word. Furthermore, each theme from the topic list was introduced with a statement. The discussion allowed for further exploration of how the different barriers and facilitators interacted. Subse-quently, participants were invited to share possible solutions to improve employment in BPD. Both focus group interviews were moderated by BS and assisted by TJ and held at the workplace of the participants. All interviews were audiotaped and transcribed verbatim. Field notes and memos were made analyzing purposes during and after the interviews.

Analysis

A thematic content analysis approach was used (182). The transcripts were summarized by the first author (TJ), and pro-vided to all participants for member checking (182); no requests for changes occurred. Atlas.ti software (version 6) was used to facilitate data management and analysis. TJ thoroughly started reading all transcripts. The analyses started with independent

coding of five information rich transcripts by TJ and MV. From this, a preliminary codebook was established by TJ and MV based on consensus by discussion. Two semi-structured interviews, the summaries of the focus groups, and the codebook were discussed with BS and MW. The data was studied case-by-case by reading and re-reading the transcripts, memos and field notes and discussing the codes and themes derived up until agreement. By analyzing the data in comparison to the other transcripts, codes were sorted and merged, and themes were created together with MV and BS. The themes were reviewed, focusing on understanding the collected data and reassuring that the data still corresponded to the themes assigned. Finally, the findings were critically discussed with all authors.

Ethical Considerations
The science committee of GGZ inGeest (CWO) approved the study and the Medical Ethics Committee of the VU University Medical Center (METC) declared that the study does not fall within the scope of the Medical Research Involving Human Subject Act (2017.092). All procedures performed in this study were in accordance with the ethical standards of this institutional research committee and following the principles of the Helsinki declaration. Written informed consent was provided by all patients with BPD.

RESULTS

Participating patients with BPD represented a heterogeneous group with respect to employment, varying from recent or long-term employment or unemployment to having multiple jobs in their employment history, see Table 1. The type of employment was also diverse (S2 Table).

Table 1. Socio-demographic and clinical characteristics of patients with BPD

	Patients with BPD (n=15) N (%)
Gender	
Female	14 (93)
Age	
Mean (range)	39 (23-58)
Employment	
Employed	4 (27)
Unemployed	11 (73)
with voluntary job, internship or unregistered job	6 (55)
Partnership	
Living alone	8 (53)
Living with partner/family	7 (47)
Co-morbid diagnoses	
Any other PD	2 (14)
Depressive disorder	4 (27)
Substance use disorder	4 (27)
PTSD	2 (14)
Generalized anxiety disorder	2 (27)
Eating disorder	2 (14)
Bipolar disorder	1 (7)
Dissociative disorder	1 (7)
AD/HD	1 (7)

Participating professionals differed in age, years of experience in working with patients with BPD, discipline (in the MHP group), and sex (primarily in the IP group), see Table 2.

Several themes emerged from the data as barriers and facilitators to employment. The overarching themes were classified into: characteristics of BPD, stigma and support to employment. Most barriers and facilitators were interchangeably connected as the identified barriers and facilitators related to similar features, see Table 3. No participants were currently enrolled in a vocational rehabilitation program, however few participants had previously received general vocational rehabilitation services. Nonetheless, no participant had experience with IPS. Support to employment in the following text refers to all previous vocational rehabilitation services provided to patients in this study.

Table 2. Characteristics of mental health practitioners and insurance physicians

Mental health practitioners (MHPs) (n=7)*

Age

Mean (range)	50 (31-65)

Sex (n)

Female	6

Position

Psychiatrist	1
Psychologist	3
Behavioral therapist	2
Occupational therapist	1

Number of years of experience working with BPD

Mean (range)	12.9 (1-30)

Insurance Physicians (IPs) (n=6)

Age

Mean (range)	51.5 (41-64)

Sex (n)

Female	3

Number of years of experience working with BPD

Mean (range)	18.7 (10-30)

BPD: Borderline personality disorder
* All participants worked in different teams (including specialist services in dialectical behavioral therapy, mentalization–based treatment and schema–focused therapy), of the same outpatient clinic for the specialized treatment of personality disorders, from which the patients were also recruited.

Table 3. Barriers and facilitators to employment in BPD from the perspectives

A. Characteristics of BPD	
Barriers	Low self-image
	Fear of making mistakes
	Previous experiences of failure → increase low self-image
	Rumination
	Mood swings
	Difficulty posing personal boundaries
	Feeling responsible
	Impulsive behavior
	Difficulty in regulating emotions
	Lack of structure/overview
	Externalization
	Overestimation
Facilitating characteristics in patients with BPD	Ambitious
	Hardworking
	Entrepreneurial
Proposed facilitators to target impeding characteristics	Amplifying self-reflection and regulation of emotions
	Treatment (to improve regulation of emotion, self-image, sensing and posing personal boundaries and structure and overview)
B. Stigma	
Barriers	Discouragement of disclosure and/or fear of disclosure of BPD
	Stigma in BPD
Proposed facilitators	Renaming BPD into emotion regulation disorder
	Relabeling of BPD by positively campaigning BPD
	Development of a 'manual' that describes symptoms and how to cope with these symptoms and encourage disclosure
C. Support to employment	
Barriers	Lack of support
	Misconception (about BPD) in vocational rehabilitation
Proposed facilitators to improve (support to) employment	Increase collaboration between services
	Integrate vocational rehabilitation services within treatment regimen
	Increase knowledge of BPD and treatment perspectives to align treatment with vocational rehabilitation

*: Identified in subgroup
BPD: Borderline personality disorder
MHPs: Mental health practitioners
IPs: Insurance physicians

of patients, MHPs and IPs

Patients	MHPs	IPs
•	•	
•	•	
•	•	
•		
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Patients	MHPs	IPs
•	•	•
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	•	
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Patients	MHPs	IPs
•	•	•
•	•	
•	•	•
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		•

A. CHARACTERISTICS OF BPD

Barriers according to patients with BPD

All patients related their problems with gaining and maintaining employment primarily to symptoms of BPD. How patients coped with their symptoms in relation to employment varied widely. Overall, they described having a low self-image that hindered employment for instance through a fear of making mistakes as exemplified by participant 14: *"Well, being insecure with respect to my job, not knowing whether I performed up to standard. [..] For six years I had great difficulty keeping up my work and meeting expectations, so that they didn't think I was weird or something. That made me feel lonely and most of all it wasn't clear to me what they expected from me".* This (further) decreased self-image and resulted in a 'downward spiral' of negative thoughts, as exemplified by participant 13: *"It feels as if I am the stupidest person in the world, I feel worthless and then I end up in a downward spiral. I remember all the previous mistakes I made until I come to a point where –when it's really bad – I'll think 'Well, I'll just cut my wrists now'".* Patients with BPD noted having high expectations of themselves while simultaneously failing these expectations and ruminating about how others might perceive them. Also, rapid mood swings caused problems to comply with previously made appointments, mostly due to instantly and unpredictably feeling depressed or behaving impulsively.

Strong feelings of responsibility led to taking up too much work, as explained by participant 7: *"About communicating my own boundaries. I am continuously crossing them myself and find it hard to communicate them to others at my work. Often I am too compliant and I end up saying: "Ok, I'll do it".* This ongoing internal process led to exhaustion described as "a ticking time bomb

that eventually bursts". A general difficulty to regulate emotions further complicated things resulting in either impulsive (often con-flictual) or avoidant behavior as described by participant 1: *"For too long I will see things I don't agree with at my job, but I don't dare to say anything about it. I just continue working. Then eventually I will have an outburst".*

Most patients mentioned having problems in several domains of life such as social, financial and their living situation. Also, comorbidity with other mental disorders such as affective and sub-stance use disorders was frequent. This, in combination with their feelings and behavior, was described as an interchangeable pro-cess of increased loss of structure and overview, also noticeable in work as described by participant 12: *"I kept forgetting the weirdest things, for example I kept losing receipts of registered mail as well as things that were send to me. I could not understand how I could lose them. I thought to myself: 'Yes, I stored them carefully.' It drove me crazy which aggravated the confusion and made me feel even more stressed. And the more stressed I got, the more things went wrong, still not understanding what was going on".*

Barriers according to mental health practitioners and insurance physicians
Both MHPs and IPs described similar BPD-related characteris-tics that impeded employment, however they provided different descriptions. MHPs explained how a low self-image was main-tained due to being easily offended: *"They [patients with BPD] have a tendency to feel at a disadvantage. If, for example, somebody raises an eyebrow in a certain way, a person with BPD can feel at-tacked, not taken seriously and not validated".* Furthermore, MHPs reasoned how individuals with BPD are often misunderstood: *"It*

seems that individuals with BPD are good at posing personal boundaries, while in fact they are not. Often they pose them too late or too little. A lack of assertiveness or interpersonal skills really. And that causes the tension to rise".

According to IPs, mood swings and impulsive behavior in BPD were due to a lack of self-reflection. This contrasts with the descriptions provided by patients and MHPs, they stated that mood swings and impulsive behavior were caused by low self-image. Furthermore, black and white thinking and externalization impeded gaining and maintaining employment according to MHPs and IPs. This is because externalization caused difficulty in evaluating previous (conflictual) situations and mitigated self-awareness in individuals with BPD.

Also overestimation of capacities was mentioned as a problem to employment as stated by an IP: *"In itself patients with BPD are good at 'selling' themselves, so at least in the beginning you're impressed. However, when it comes down to it they perform poorly which tends to irritate employers. Realizing a goal is possible, but very often not together with colleagues, which makes it hard. Besides, it's not only the patients that overestimate themselves, it's also their environment".* Another IP stated: *"And if they [patients with BPD] overestimate themselves it becomes very difficult to find a suitable job, because if they like a job, you often think it's not realistic".* Furthermore, IPs noted that patients with BPD typically pursue jobs that trigger symptoms of BPD, and IPs therefore declared these jobs as unsuitable. For example, patients with BPD often wanted to work with vulnerable people. Eventually, this compassion for others often turned into a barrier due to a lack of posing personal boundaries and becoming overly involved until they call in sick or act impulsively.

Proposed facilitating characteristics in relation to barriers according to all participants

The following characteristics in patients with BPD were described as facilitators to employment: working hard, being entrepreneurial, ambitious and passionate, and having various interests. MHPs described that patients with BPD, despite the association with dysfunctional interpersonal skills, are emphatic and sensitive to others. However, all groups came to realize that these facilitating characteristics could easily change into barriers. An MHP noted: *"Often, at least at the beginning, they [patients with BPD] have a certain energy and enthusiasm that can be contagious for co-workers. They feel like they're starting over with a clean slate and are highly motivated. So, as long as that period lasts, I can imagine that employers are happy with them".* An individual with BPD exemplified how her drive (as a facilitator) could turn into a barrier, participant 13: *"In retrospect I can think 'give yourself a break', but at that moment I just have to succeed. Somehow, I take it all too seriously, I want to do well and I run the risk of losing myself in my work. If then it doesn't work out, I feel so responsible that I can literally freak out".*

Patients described how treatment helped them to better understand their feelings by learning to regulate their emotions. Treatment furthermore improved recognizing feelings and corresponding behavior, as summarized by participant 1: *"[Being in treatment] taught me to handle things differently. I observed my own behavior and came to realize that I should stop pointing my finger at other people. It's not 'he, he, he' or 'she, she, she', it's 'me'. My psychologist taught me to stop being a victim [..] He told me: 'it is up to you' and I knew he was right, I just did not know yet how to do things differently".* MHPs emphasized

that treatment is furthermore needed to increase self-image and self-awareness and improve sensing and posing personal boundaries. Treatment also contributed to diminish the stress experienced from problems in various life domains by helping to increase overview and structure. According to all participants diminishing impeding BPD characteristics was necessary before return to employment, however IPs were unfamiliar with treatment prospects in BPD.

B. STIGMA

Barriers according to patients with BPD

Some patients with BPD gave examples of being fired due to (involuntary) disclosure of their diagnosis. However, two participants had good experiences with disclosure. All, except these two participants, would not disclose their diagnosis in the future because they believed BPD is being stigmatized. They felt that disclosure would abate their chances to gain employment, or expressed not to know how to disclose their diagnosis in a constructive manner. These patients felt that it would be better to either describe mere BPD symptoms or disclose any other diagnosis because of the stigma surrounding BPD, as exemplified by participant 12: *"I had to fill out a form about mental illness. I am open about that, although I didn't use the term borderline. Instead I stated that I am suffering from a depression, because there is a lot of overlap between the two disorders and I think the term borderline has too much negative connotations".*

Barriers according to mental health practitioners and insurance physicians

MHPs described how the name BPD and the corresponding stigma resulted in anticipated stigma in patients with BPD. More specifically, MHPs explained how the 'label' BPD confirmed the low self-image already present in patients with BPD. Simultaneously, during the focus group MHPs realized they were stigmatizing themselves and tended to think that patients with BPD would not recover from their disorder. IPs also noted having little hope about the capabilities of patients with BPD in relation to employment, one IP stated: *"We are stigmatizing them too I guess. [..] You develop a prejudice based on previous experiences. In a way that you think: 'this will never work".* Moreover, both professional groups would not recommend disclosing BPD to potential employers. Simultaneously, they realized that this induces preservation of the stigma surrounding BPD, as exemplified by an MHP: *"But in fact we're part of the problem of stigmatization [..] Apparently we all agree with them that it's better not to disclose their diagnosis".*

Proposed facilitators to target stigma according to all participants

MHPs specifically mentioned it was essential to 'relabel' BPD in order to target stigma. This positive 'relabeling' should be done through mental health care and anti-stigma programs. This relabeling should include 1) renaming BPD, for instance in emotion regulation disorder (as preferred by both patients and MHPs), 2) promoting the positive features of patients with BPD in relation to employment in the public (for instance in the form of a campaign as has been previously done for autism spectrum and depres-

sive disorders), and by educating the general public about BPD as exemplified by an MHP: *"Psychoeducation is needed to lessen the stigma surrounding BPD. For instance, it is important to communicate that there are multiple evidence-based treatments available for BPD".* Moreover, both MHPs and IPs suggested to develop a 'manual' for employers, co-workers and patients with BPD themselves in which both symptoms of BPD are described and how to cope with these symptoms.

C. SUPPORT TO EMPLOYMENT

Barriers in support to employment according to patients with BPD

With regard to reintegration services, some patients with BPD expressed feeling being set aside, as exemplified by participant 9: *"I had the idea that the vocational rehabilitation service from the SSA just stopped calling me. Probably because they gave up on me and thought I would not recover".* Although some IPs allowed patients with BPD to undergo treatment before restarting work, there were also patients who felt pressured by IPs to return to employment as soon as possible regardless of their mental health as exemplified by participant 10: *"They just follow the protocol and try to reach their targets. They're insensitive to your arguments. They just wait and see how you respond. I think that is the idea because I provided the IP with contact information of my clinicians and my entire treatment history, but he just didn't hear it. Up to the point that I became emotional and asked: 'Do you get it?'. And he just replied 'Yes, I know what you're after', in other words 'I know that you want to continue receiving sickness benefits'. Then I think by myself 'You really do not take the effort to understand".*

Barriers in support to employment according to mental health practitioners and insurance physicians

MHPs acknowledged there was little attention for employment in most treatment programs. Initiatives for support to employment often came from patients with BPD themselves, that were subsequently referred to the departments' occupational therapist. There was however, one treatment program that devoted sessions to post-treatment employment.

IPs acknowledged having a lack of knowledge in treatment prospects for BPD. Also, IPs noted that collaboration between mental health and vocational rehabilitation services was lacking. One IP however (from another region), stated that their office had a fruitful collaboration with mental health institutions marked by frequent counselling and educating each other. IPs addressed that it was difficult to assess working capability for someone with BPD because based on the criteria of disability insurance, patients with BPD are mainly assessed as eligible for (certain types of) employment. However, IPs simultaneously realized that in order to increase sustainable employment it might be necessary to reduce BPD symptoms first.

Furthermore, an MHP stated that the SSA treats patients with BPD differently than patients with other mental disorders: *"I have multiple examples of insurance physicians who state that a personality disorder is not a medical condition [and for that reason do not advice sickness or social security benefits], while a depressive disorder is".*

Proposed facilitators necessary to improve (support to) employment in BPD according to all participants

All participants acknowledged the importance of employment.

Furthermore, all patients with BPD wanted to be employed and expressed hope in achieving this goal, although two patients realized return to competitive employment was no longer feasible for them (one was found to be incapacitated for work according to the Work Capacity Act (WAO)). Another participant described many previous situations in which she felt mistreated by 'the system', therefore she no longer wanted to work for that 'system' and only wanted to perform undeclared work. Furthermore, patients with BPD described that they often felt misunderstood outside the mental health care system. Therefore, they would rather start exploring ways to (re-)start employment during the course of their treatment. Furthermore, this exploration preferably took place with one designated person to discuss potential difficulties and support in gaining and maintaining employment and to whom they could potentially return.

All groups expressed that collaboration between mental health services and vocational rehabilitation should be improved to enhance (support to) employment in patients with BPD. Most patients described that in previous working experiences a working environment in which they felt comfortable and accepted was the most important aspect. Some patients described how work distracted them from symptoms of BPD such as mood swings and negative thoughts. Two patients with BPD referred to the need of feeling comfortable within their working environment and of being personally responsible for clearly defined tasks, as described by participant 8: *"[The best working conditions in the past constituted] feeling secure with the colleagues around me, I suppose, and having my own little enterprise"* [in which clearly defined personal tasks were performed]. Both MHPs and IPs described a similar working climate necessary, in which a certain

amount of freedom with clearly defined tasks was key. Concur-
rently, MHPs and IPs endorsed the need of a match between
work context and the individual with BPD (with personal needs
and characteristics).

DISCUSSION
In the present study, barriers and facilitators to employment in
BPD were studied by interviewing patients, mental health prac-
titioners, and insurance physicians. We found that the identified
barriers and facilitators related to three overall themes: char-
acteristics of BPD, stigma and support to employment. Gener-
ally barriers and facilitators corresponded to identical features,
revealing an interactive process within each theme. The suggest-
ed facilitators provided key elements of targeting the identified
barriers. Overall, more barriers than facilitators were mentioned
by all groups, especially when BPD symptoms were not treated.
Also identified barriers were mostly related to maintaining em-
ployment and less to gaining employment, which seems different
than for other severe mental disorders.

Characteristics of BPD
According to all participants barriers mainly related to symptoms
of BPD. This finding is consistent with literature proposing a link
between the core symptoms of BPD (mood swings and prob-
lems in interpersonal relationships and self-image) and multiple
areas of impaired functioning (9,120,185). Although patients with
BPD stated to have the ability and wish to work with others, they
simultaneously felt misunderstood and reported low self-image
and difficulties in posing personal boundaries. This corresponds
to previous findings showing that although patients with BPD

accurately sensed and connected to the emotions of others, their understanding and contextualizing of emotions and thoughts of others was impaired compared to healthy controls (186,187). Furthermore, patients with BPD explained how multiple problems from different domains of life further aggravated their sense of loss of overview, also affecting their job. Previous studies showing a chronic state of heightened affect in patients with BPD (188) could explain this vicious circle of additional problems typical in BPD. We additionally noted that, in contrast to other severe mental disorders, where a lack of motivation or work experience mainly hindered gaining employment (85,169), BPD patients in our study experienced difficulty in maintaining employment and adequately regulating emotions at work.

The participants in the present study explained that treatment is needed to diminish symptoms and thereby increase functioning. In turn, being employed was found to naturally diminish BPD symptoms (99) and increase self-reflection (164). According to MHPs and IPs, externalization and overestimation of patients with BPD resulted in pursuing unsuitable jobs. Due to a difficulty in regulating emotions, patients with BPD were often overwhelmed by their emotions and consequently had lessened understanding of their behavior resulting from these emotions. This low self-awareness, self-reflection, and self-directedness in BPD were previously described as being the cause of externalization and overestimation in BPD (14,189). Furthermore, patients with BPD are more likely to report on problems as caused by others (63). However, Horn and colleagues (190) argue that externalization in patients with BPD should be used to move away from "hopelessness" and the "personality disorder" label. Acknowledging externalization and simultaneously challenging thoughts and feelings

of rejection can be used to find ways for patient and practitioner to break out of a vicious cycle of detrimental interplay. To some extent this was also found in the present study, as IPs observed a different attitude in patients with BPD when following patients' job wishes. However, this did not always lead to successful placements.

Stigma
In line with previous literature, patients with BPD felt great antipathy towards the "borderline" label although they appreciated receiving support and therapy based on their diagnosis (190,191). In addition, MHPs and IPs realized being biased themselves about the capabilities of patients with BPD to work. Previous studies showed that negative attitudes of professionals towards the capacity to gain employment impeded gaining and maintaining employment in patients with mental illnesses (192,193). This may also hold for patients with BPD.

Furthermore, Bungert and colleagues (194) previously suggested that the negative attitudes of professionals could increase feelings of rejection and abandonment in patients with BPD. Simultaneously, both MHPs and IPs realized being at risk of inducing anticipated stigma in patients with BPD by having little hope for improvement in functioning. This anticipated stigma from professionals was previously argued to impede gaining employment (183). Both patients with BPD and MHPs suggested that BPD should be renamed 'emotion regulation disorder' in an attempt to facilitate disclosure of the diagnosis to employers and coworkers. Simultaneously, disclosure could serve as a means to communicate needs and adjust working conditions accordingly, ultimately increasing sustainable employment and target-

ing stigma (195–197). Among patients however, fear of stigma and discrimination was an important reason for non-disclosure. Goldberg and colleagues (198) demonstrated that the choice of disclosure was related to the individuals' phase of recovery, suggesting that those 'further' in the recovery process were better able to manage their symptoms and skills. This was confirmed by the patients from the present that already received treatment for some time. Furthermore, professionals explained that an increase of self-reflection (through treatment) was needed to increase sustainable employment. In addition to previous studies on barriers and facilitators to employment in mental health disorders, the present study suggested useful strategies for practice, such as developing a manual to manage disclosure and promoting the positive features of BPD in the public domain to target stigma.

Support to employment
An important facilitator identified in our study was that most patients with BPD wanted to be employed (in the future) and expressed hope of achieving this goal. This is essential since the motivation to be employed is found to be a predictor of sustainable employment in individuals with mental illness (next to job match, support and self-confidence) (85,199). IPs acknowledged the importance of motivation for employment, yet generally perceived the desired job of patients with BPD as unsuitable. However, matching job wishes and following patient preferences are key elements of supported employment and important facilitators for sustainable employment (85,199,200).

The need to increase collaboration between mental health and vocational rehabilitation services was endorsed by all participants. Patients with BPD found support to employment strat-

egies fragmented and not fitting their needs. Previous studies addressed this lack of support and insufficient collaboration between mental health services and SSA in individuals with diverse mental health problems (170–173). In line with our findings, these studies showed that a lack of collaboration between services together with having problems in different domains of life, next to mental health problems, affected return to employment. They stated that more support is needed in addressing these problems in order to sustainably return to work. In addition to this literature the present study demonstrates that the sometimes diverging perspectives of patients and professionals requires a better understanding of BPD to better match adequate support.

Integrating vocational rehabilitation services within mental health care following patient preferences and providing long-term support are key principles of the evidence-based supported employment method IPS (80). This method, originally developed for patients with severe mental illness, centers on the principle of direct employment without preceding training, while focusing on participants' preferences and the assumption that everyone with a wish to gain employment should have the opportunity to find regular paid employment (201–203). Given the identified barriers in this study, IPS thus seems to be a particularly suitable method of supported employment in BPD. Currently in the Netherlands however, although all individuals regardless of type of mental disorder are eligible for vocational rehabilitation, IPS is only available for patients in FACT care. This means that patients in specialized treatment programs for BPD currently have no access to IPS. Importantly, IPS has recently also been shown to be effective in other populations than in patients with severe mental illness, such as patients with post-traumatic stress disorder, common mental

disorders and substance use disorders (89). Bond and colleagues (2019) suggest that modifications in the IPS program might be needed in these patient groups as they are often heterogeneous and in need of an individualized approach, which is in line with the pragmatic principles of IPS not being specific to any impairment or condition. This may also hold for IPS in patients with BPD as they often have heterogeneous symptoms, significant comorbidity and outspoken wishes for employment, which are, according to professionals, not always easy to match.

Strengths and limitations

To the best of our knowledge this is the first study qualitatively examining barriers and facilitators to employment in BPD among patients, MHPs and IPs. Strengths of the current study include: 1) the triangulation of perspectives from patients, MHPs and IPs as assessed with both in-depth individual interviews and focus group interviews, 2) the comparison between different perspectives from two fields of practice, and 3) the broad sample of patients with BPD constituting those with diverse backgrounds in age, work history and treatment history. The study, however, also has limitations. First, snowballing was used to include eligible participants, which might have led to selection bias. Second, it is conceivable that patients with a less favorable attitude towards employment were not interested in participating, leading to an overestimation of the perceived importance of employment in BPD (especially since we had little information about non-responders). Third, patients from the present study represent a selective group of BPD patients that are in specialized treatment programs for BPD. A significant portion of BPD patients are not in treatment (105,120). Clearly, our results do not generalize to

all individuals with BPD. Fourth, we did not study the interplay between patients and both professionals groups, which would have extended our findings. However, from this first explorative study we found that perspectives diverged. Therefore, future research could study the interplay between patient and professional (dyads) in a multiple case study design. Fifth, the perspectives of employers were not explored which causes the results to be relatively less applicable to the pathway of maintaining employment. Sixth and finally, most patients with BPD in the present study also had other mental disorders, that by themselves have been shown to impair employment. Likewise, comorbidity of BPD with affective disorders was found to increase occupational impairment (131). Although during the interviews we consistently aimed to distinguish the barriers and facilitators originating from BPD from those originating from possible comorbid disorders, we cannot completely disentangle them in this study. In addition, severity of BPD has been argued to be a determinant of impairment in occupational functioning (24,151).

CONCLUSIONS AND IMPLICATIONS FOR PRACTICE AND FURTHER RESEARCH

The identified barriers and facilitators guide future research into employment in BPD and suggest that support to employment in individuals with BPD can be enhanced. The present findings clearly suggest that diminishing symptoms, examining stigma and increasing support to employment could serve as starting points for future research. Most identified facilitators correspond to important elements of evidence-based support programs to employment, such as IPS. These programs have a patient-centered approach and integrate mental health and vocational services

(200). Studying the effectiveness of IPS, which so far has been primarily examined in the context of severe mental illness in general (204–207), may be a promising first step. In studying support to employment for BPD, key elements should be 1) acknowledging a potential divergent perspective in professionals and patients about suitability of pursued employment, and 2) examining the role of stigma and disclosure in the pathway of gaining and maintaining employment for patients with BPD.

Author disclosures

Competing interests
The authors declare that they have no competing interests.

SUPPORTING INFORMATION

S1 File. Topic list

Sociodemographic information:

- Age

- Level of education

- Living situation

Employment:

- Current situation?

- Employment history

- Work experience last 5 years

- (Social) benefits?

- Vocational rehabilitation trajectories? (current & past)

General experience with employment/vocational rehabilitation

- Positive & negative experience (decision latitude, psychological job demands, job security, and social support) in relation to previous work experience if possible

- Support from Social Security Administration/municipality?

Self-awareness

- Expectations of being employed?

- Motivation to be employed?

- Advantages & disadvantages of being employed?

Symptoms

- Facilitating/ impeding

Support
- Experienced support?
- Missed support?

Stigma
- Anticipated stigma
- Discrimination

Disclosure

S2 Table. Characteristics of patients with BPD

Participant (n=15)	Gender	Age	Employment situation and income
1	Female	34	Employed, housekeeping (approximately 10h per week) Previously fulltime employed Additional social welfare benefits income (municipality)
2	Female	30	Employed, civil servant (18h per week) Previously fulltime employed
3	Female	46	Employed, hospitality sector (10h per week) Previously employed in retail (32h per week) Additional sickness benefits income (SSA)
4	Female	23	Unemployed since approximately 4 months Previously employed in housekeeping (non-fixed hours) Sickness benefits income (SSA)
5	Female	49	Unemployed Recently quitted voluntary job in child care Sickness benefits income from the disability Act (WAO – incapacitated for work) (SSA)
6	Female	43	Unemployed but in voluntary job hospitality sector (1 day per week) Social welfare benefits income (Municipality)
7	Female	26	Unemployed Previously employed in child care (fulltime) Social welfare benefits income (Municipality)
8	Female	58	Employed, administrative officer (24/25h per week) Previous 36 years fulltime Since recently, partially in sickness benefits (SSA)

Living situation	Borderline personality disorder diagnosed (DSM-IV)	Comorbid psychiatric disorder
Single, living with son	October 2015	Post-Traumatic Stress Disorder
Single, living with mother	June 2016	Paranoid personality disorder
Recently divorced, room with shared facilities	March 2016	Generalized anxiety disorder
Single, no permanent residence	December 2016	Depressive disorder, Substance use disorder,
Single	November 2004	Eating disorder
Single	July 2010	Dissociative disorder,
Single, temporary housing	April 2015	Depressive disorder
Single	September 2012	Depressive disorder, Avoidant personality disorder

Participant (n=15)	Gender	Age	Employment situation and income
9	Female	33	Intern at government institution (fulltime) Previous 5 years in sickness benefits (SSA)
10	Male	36	Unemployed Previous 13 years employed in retail (fulltime) Sickness benefits income (SSA)
11	Female	48	Unemployed Previously employed in retail (32h per week) Sickness benefits income (SSA)
12	Female	34	Unemployed Previously employed as administrative officer (fulltime) Sickness benefits income (SSA)
13	Female	36	Unemployed but in voluntary job in multimedia (without fixed hours) Social welfare benefits income (Municipality)
14	Female	40	Unemployed Sickness benefits income from the disability Act (WAO - incapacitated for work) (SSA)
15	Female	50	Unemployed but side earnings from unregistered jobs (without fixed hours) Social welfare benefits income (Municipality)

SSA: Social Security Administration
PTSD: Post–Traumatic Stress Disorder
AD/HD: Attention Deficit Hyperactivity Disorder

Living situation	Borderline personality disorder diagnosed (DSM-IV)	Comorbid psychiatric disorder
Living together	January 2012	None
Single	May 2017	None
Single, living with daughter	February 2011	Attention Deficit Hyperactivity Disorder (AD/HD), Substance use disorder
Single	June 2015	AD/HD
Living apart together (LAT)	April 2016	Depressive disorder, Generalized anxiety disorder, AD/HD
Single living with children	February 2016	Bipolar disorder, PTSD
Single living with son	January 2015	Substance use disorder,

Chapter 5

Characteristics and predictors of educational and occupational disengagement among outpatient youth with borderline personality disorder

Trees Juurlink

Jennifer Betts

Katie Nicol

Femke Lamers

Aartjan Beekman

Sue Cotton

Andrew Chanen

ABSTRACT

This study aimed to investigate predictors of vocational disengagement (referred to as Not in Employment, Education, or Training (NEET)) in young people with borderline personality disorder (BPD). The sample comprised 112 outpatients with BPD, aged 15 – 25 years, who participated in a randomised controlled trial (ANZCTR12610000100099). The proportion of participants who were NEET (39.3%) at study entry did not improve after 18 months and NEET status frequently changed. Therefore, multinomial regression analyses were used to study three groups: non-NEET, NEET and Unstable NEET status. NEET status was predicted by not achieving expected age-appropriate educational milestones, greater instability in both interpersonal relationships and identity. Greater instability in interpersonal relationships and identity predicted Unstable NEET status. The findings suggest that specific vocational interventions, that also incorporate a focus on interpersonal functioning and identity disturbance, are needed to improve functioning in young people with BPD, especially when educational milestones are not achieved.

INTRODUCTION

Borderline personality disorder (BPD) is associated with high levels of health resource usage, long-term unemployment and functional disability (17,31,99,115). BPD is marked by early onset, making it likely to disrupt educational achievement, employment and career development (50,208–210). Early intervention has been demonstrably effective in reducing disorder-related symptoms in young people with BPD (211). However, vocational functioning has been found to remain substantially impaired (19,208,209,212). Furthermore, among community-dwelling young people, the severity of BPD pathology has been shown to predict poorer academic and occupational status, lower attainment of developmental milestones, and higher likelihood of needing services 20 years later (22).

Previous studies have shown that, in addition to poorer functioning (21,209,210), young people with BPD experience a greater number of co-occurring mental disorders, such as substance use, mood, anxiety and disruptive behaviour disorders than young people without BPD (21,213,214). In adults, comorbidity of BPD with alcohol abuse and affective disorders is common (26,134), and is found to increase occupational impairment (131). Since 'comorbidity' of these disorders is also frequent among young people with BPD, this might also contribute to poorer vocational functioning in this group (210).

In young people experiencing first-episode psychosis, being competitively employed or in education during the early stages of treatment has been found to predict occupational recovery at 12-month, 18-month and 5-year follow up (215,216). The prevalence of vocational disengagement (Not in Employment, Education,or training; NEET) across young people with first-ep-

isode psychosis, severe depression, and BPD (212) has been found to be similar. A previous study demonstrated that 33.3% of young people receiving specialist clinical care for BPD were NEET upon treatment entry (50). NEET among young people with either first-episode psychosis, depressive disorder or BPD has been cross-sectionally associated with older age, and not having commenced tertiary education (52). It is, however, unclear what factors predict NEET status in BPD longitudinally.

Therefore, this study aimed to: (i) describe the characteristics of young people with BPD who are NEET, compared with those who are non-NEET at the beginning of their treatment; (ii) examine changes in NEET status over 18 months; and (iii) investigate factors that might predict cross-sectional NEET status and longitudinal changes in NEET status over 18 months.

METHODS

Design

The present study involved secondary analysis of data from a larger randomized controlled trial (RCT), known as Monitoring Outcomes of BPD in Youth (MOBY) (217). This study examined the effectiveness of three forms of early intervention for BPD with adaptive functioning (social adjustment and interpersonal problems) as the primary outcome (217). A detailed elaboration of the MOBY RCT methodology is presented elsewhere (217) (Australian New Zealand Clinical Trial Registry (ACTRN12610000100099)).

Sample and setting

Participants were recruited from Orygen or headspace, government-funded youth mental health services in western and

north-western metropolitan Melbourne, Australia between 2011 to 2015. Assessments occurred at baseline, and 3, 6, 12 and 18 months thereafter. Key inclusion criteria were: 1) age 15 to 25 years (inclusive); 2) Structured Clinical Interview for DSM-IV (SCID) Axis II Disorders (218) diagnosis of BPD. Key exclusion criteria were: 1) SCID Axis I Disorders (SCID-I/P(219)) diagnosis of psychotic disorder within the past 12 months; 2) lifetime diagnosis of a schizophrenia spectrum disorder or bipolar I or II disorder; 3) prior evidence-based treatment for BPD. All participants (and a parent/legal guardian for those aged under 18 years) gave written informed consent.

Of the 139 randomised participants, individuals with three or more missing values on occupational and educational status during the study period were excluded from the analyses (n=25). Furthermore, 27 participants did not complete the measure of BPD severity at the 18-month assessment and were excluded from the analysis, resulting in a total sample size of 112 participants. For the longitudinal analyses, three groups were constructed, based on NEET status, which was defined as not in employment (either part- or full-time) and not studying or homemaking. The Non-NEET group comprised participants who were non-NEET from baseline until 18 month follow-up (50% of Non-NEET group), or changed from NEET into non-NEET during the study and remained non-NEET at 18 month-follow up. Conversely, for the NEET group those who were NEET from baseline until 18 month follow-up (60.1% of NEET group), or changed from non-NEET into being NEET and remained NEET at 18 month follow-up were grouped in the NEET group. The Unstable group included those who deviated status two or more times during study follow-up.

Measures

Predictors

Severity of BPD features was measured with the BPD Severity Index (BPDSI) (220). The BPDSI is a 70-item questionnaire divided in nine subscales (abandonment, interpersonal relationships, identity disturbance, impulsivity, parasuicidal behaviours, affective instability, emptiness, outbursts of anger, dissociation and paranoid ideation) representing the nine DSM-IV-TR BPD criteria. Likert scales ranging from 0 (never) to 10 (daily) were used to assess frequency of the item over the past three months, except for the identity disturbance subscale which was rated based on severity on a 5-point Likert scale.

Depressive symptoms in the past week were measured with the Montgomery Åsberg Depression Rating Scale (MADRS) (221), using the Structured Interview Guide for the MADRS (SIGMA) (222). The SIGMA has a 6-point Likert response scale ranging from 0 to 6. Total scores could range from 0 to 60 with higher scores indicating more severe symptomatology.

Alcohol-related problems and risk were evaluated with the Alcohol Use Disorders Identification Test (AUDIT) (223). This 10-item self-report measure was scored on a 5-point Likert scale ranging from 0 to 4. Total scores ranged from 0 to 40, with higher scores depicting greater severity.

Demographic data included sex, age, occupational and educational status and level of completed education. Participants were deemed to have achieved an age-appropriate educational milestone if they passed a year level at the age at which most school students in the State of Victoria (in Australia) would pass that level (with a tolerance of one additional year). For example, most Victorian students complete Year 9 at age 15 years, so if a

participant was 17 years of age and had not passed Year 9, they would not have met that age-appropriate educational milestone. Notably, the legal school leaving age in Victoria is 17 years and young people must attend a school campus until they complete Year 10.

Subsidiary measures

Diagnoses were derived from assessments of the Structured Clinical Interview for DSM-IV Axis I disorders (SCID-I/P; (219)) and the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II; (218)).

Statistical analyses

Sample characteristics were calculated using a range of descriptive statistics. Logistic regression was conducted to assess cross-sectional baseline associations between clinical and socio-demographic variables and NEET status. Unadjusted odds ratios (OR) and 95% confidence intervals (CI) were calculated.

Multinomial logistic models were used to examine NEET status over time by comparing the three groups (Non-NEET, NEET and Unstable), and to examine predicting covariates (age, sex, achieved educational milestone, BPD severity, depressive symptoms and substance use), and BPDSI subscales. Mixed modelling was not possible due to the variability in NEET statuses over the baseline and follow-up assessments (Figure 1) and because there was an insufficient number of participants for classification into stable Non-NEET and NEET groups. Missing values for NEET status were imputed by the last available status. Unadjusted and adjusted odds ratios (OR) and the 95% confidence intervals (CI) were calculated. The alpha level was set at 0.05 for all analyses.
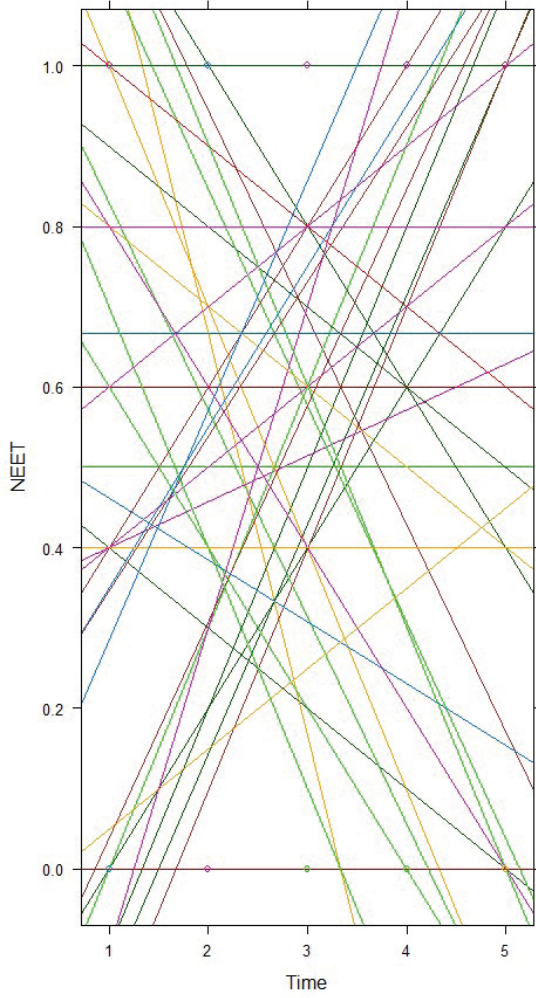
Fig. 1 Growth curve NEET status of five timepoints: baseline, 3, 6, 12 and 18 months p=<.001.

RESULTS

The majority of the 112 participants were Australian born (86.6%) females (80.4%), presenting with a mean of 2.5 (SD = 1.4) mental state disorders and 2.2 (SD = 1.3) personality disorders, (including BPD), at baseline.

NEET status at baseline

With regard to the cross-sectional occupational and educational status at baseline, of the 112 participants, 9 participants (8.0%) were in full-time employment ($\geq$31 h/week), 23 (20.5%) had part-time employment ($\leq$30 h/week), and 36 (32.1%) participants were students or homemakers. There were 42 (37.5) unemployed participants, and 2 (1.8%) participants were on medical or psychiatric leave. Therefore, 44 participants (39.3%) had NEET status. Table 1 shows the baseline characteristics of those who were NEET and non-NEET. NEET status was significantly associated with age $\geq$ 18 years (OR=2.88, 95%CI 1.30-6.39), not achieving the expected educational milestone (OR=3.56, 95%CI 1.58-8.04) and problematic alcohol use (OR=0.95, 95%CI 0.91-0.99).

Table 1. Baseline demographic and health characteristics by NEET status (n=112).

	NEET status		OR	95% CI	p-value
	No 60.7% (n=68)	Yes 39.3% (n=44)			
Variables (separate logistic regression models)					
Female, % (n)	77.9 (53)	80.4 (37)	1.50	0.56-4.03	.43
Age, mean (SD)	18.3 (2.5)	20.1 (2.8)	n/a	n/a	n/a
≥ 18 years, n (%)	20.7 (49.2)	21.6 (50.8)	**2.88**	**1.30-6.39**	**<.01**
Expected educational milestone achieved, %(n)	76.5 (52)	47.7 (21)	**3.56**	**1.58-8.04**	**<.01**
BPDSI total, mean (SD)	39.2 (13.1)	40.0 (12.9)	1.00	0.97-1.03	.76
Abandonment, median (IQR)	4.14 (4)	3.64 (4)	1.04	0.89-1.21	.65
Interpersonal relationships, median (IQR)	3.88 (3)	4.06 (3)	0.98	0.82-1.17	.82
Identity, median (IQR)	3.75 (5)	3.91 (4)	1.01	0.88-1.17	.86
Impulsivity, median (IQR)	1.86 (2)	2.50 (3)	0.86	0.69-1.07	.19
Parasuicidal behaviours, median (IQR)	2.42 (2)	2.85 (2)	0.86	0.66-1.11	.23
Affective instability, median (IQR)	8.10 (3)	8.40 (2)	0.94	0.82-1.20	.94
Emptiness, median (IQR)	6.50 (3)	7.00 (4)	0.92	0.79-1.10	.34
Outbursts of anger, median (IQR)	4.17 (4)	4.33 (3)	1.04	0.90-1.24	.64
Paranoid ideation, median (IQR)	3.56 (4)	4.25 (4)	1.01	0.86-1.19	.88
MADRS total, median (IQR)	28.00 (10)	30.50 (13)	0.96	0.92-1.01	.10
AUDIT total, median (IQR)	6.00 (14)	11.5 (16)	**0.95**	**0.91-0.99**	**.02**

NEET: Not in Employment, Education, Training; OR: Odds Ratio; 95% CI: 95% Confidence Interval; n/a: not applicable; SD, standard deviation; IQR, interquartile range. Significant p–values highlighted in bold.

Table 2. NEET status at baseline compared with NEET status at 18-month follow-up (n=86).

		Baseline, % (n)		
		NEET	Non-NEET	Total
18 months, % (n)	NEET	47.1 (16)	52.9 (18)	39.5 (34)
	non-NEET	32.7 (17)	67.3 (35)	60.5 (52)
Total		38.4 (33)	61.6 (53)	100 (86)

NEET: Not in Employment, Education, Training

NEET status at 18 months

At 18 months, cross-sectional occupational and educational status was available for 86 participants: 9 (10.5%) were working full-time, 21 (24.4%) were part-time employed, and 22 (25.6%) were studying. Of the 86 participants, 34 (30.4%) had NEET status at 18 months. However, with missing values imputed, 39.5% had NEET status after 18 months.

Change in NEET status over 18 months

Of those participants who were NEET at baseline, 16 (47.1%) were also cross-sectionally defined as NEET at 18 months (Table 2). Longitudinally, with missing values imputed, 36 participants (32.1%) met criteria for the Non-NEET group, 46 participants (41.1%) met criteria for the NEET group and 30 participants (26.8%) met criteria for the Unstable group.

The associations between longitudinal NEET group membership and the covariates are shown in Table 3. Compared with those grouped into NEET, those grouped as Non-NEET were more likely to achieve educational milestones (OR=0.07, 95%CI 0.02-0.27) and score higher on the BPDSI subscale interpersonal relationships (OR=1.81, 95%CI 1.25-3.63). Compared with those in the NEET group, those grouped into Unstable NEET were more likely to achieve educational milestones (OR=0.11, 95%CI 0.03-0.43), and to score lower on the BPDSI subscale identity (OR=0.73, 95%CI 0.55-0.96). Compared with the Non-NEET group, the Unstable group was more likely to have a lower score on the BPDSI subscale interpersonal relationships (OR=0.71, 95%CI 0.52-0.97) and to have a lower score on the BPDSI subscale identity (OR=0.74, 95%CI 0.56-0.99).

Table 3. Multinomial logistic regression with baseline predictors of longitudinal NEET group status (n=112).

Baseline predictor	Non-NEET vs NEET (ref)			Unstable vs NEET (ref)		
	OR	95% CI	p-value	OR	95% CI	p-value
Female gender	1.80	0.49-6.64	.38	1.94	0.50-7.56	.34
Age ≥18 years	0.83	0.25-2.79	.76	1.59	0.47-5.42	.46
Milestone achieved	**0.07**	**0.02-0.27**	**<.01**	**0.11**	**0.03-0.43**	**<.01**
BPDSI total	1.00	0.96-1.04	.87	0.98	0.94-1.02	.35
MADRS total	1.03	0.97-1.09	.39	1.01	0.95-1.07	.81
AUDIT total	0.97	0.91-1.03	.34	0.96	0.90-1.02	.21
Subscales BPDSI*						
Abandonment	0.99	0.76-1.27	.91	0.90	0.69-1.17	.42
Interpersonal	**1.81**	**1.25-2.63**	**<.01**	1.28	0.87-1.87	.21
Identity	0.98	0.76-1.26	.85	**0.73**	**0.55-0.96**	**.03**
Impulsivity	0.93	0.62-1.41	.74	0.92	0.61-1.39	.68
Parasuicidal						
behaviours	0.86	0.55-1.32	.48	0.95	0.61-1.47	.81
Affective	0.69	0.45-1.06	.09	0.79	0.51-1.22	.28
Emptiness	1.14	0.84-1.56	.40	1.32	0.96-1.81	.09
Outbursts of anger	0.93	0.67-1.29	.67	1.11	0.80-1.54	.53
Paranoid ideation	0.86	0.63-1.18	.35	0.97	0.71-1.32	.83

Non-NEET group, % (n)		32.1 (36)
NEET group, % (n)		41.4 (46)
Unstable changing group, % (n)		26.8 (30)

Unstable vs non-NEET (ref)		
OR	95% CI	p-value
1.08	0.30-3.94	.91
1.92	0.55-6.74	.31
1.55	0.46-5.19	.48
0.98	0.94-1.03	.43
0.98	0.93-1.04	.55
0.99	0.93-1.05	.71
0.91	0.70-1.19	.49
0.71	**0.52-0.97**	**.03**
0.74	**0.56-0.99**	**.05**
0.98	0.67-1.44	.93
1.11	0.70-1.74	.67
1.14	0.78-1.67	.49
1.15	0.86-1.55	.35
1.19	0.88-1.61	.26
1.12	0.81-1.56	.49

NEET: Not in Employment, Education, Training; OR: Odds Ratio; 95% CI: 95% Confidence Interval; BPDSI: Borderline Personality Disorder Severity Index; MADRS: Montgomery Åsberg Depression Rating Scale; AUDIT: Alcohol Use Disorders Identification Test.
Significant p-values highlighted in bold
*Adjusted for gender, age, expected educational milestone, MADRS total, AUDIT total

Pearson correlations showed moderate correlations between baseline educational milestone and baseline age (r=-0.514, p=<0.001) and baseline educational milestone and baseline NEET status (r=0.295, p= 0.002). Of note, in the age group 15 to 18 years, 47 (88.7%) participants achieved age-appropriate educational milestones as opposed to 26 (44.1%) participants aged ≥18 to 25 years. Also, in the non-NEET group, 52 (76.5%) participants achieved age-appropriate educational milestones as opposed to 21 (47.7%) participants of the NEET group.

DISCUSSION

Three main findings arise from this study of the characteristics of young people with BPD who were of NEET status, along with predictors of NEET status over 18 months. First, NEET status was cross-sectionally associated with older age, not achieving educational milestones and problematic alcohol use at baseline. Second, NEET status was highly variable over time, but the proportion of young people who were NEET at baseline compared with 18 months was similar. Third, predictors of NEET status or changing NEET status were not achieving educational milestones, unstable interpersonal relationships, and unstable identity.

In the present sample, 39.3% of young people with BPD were NEET at the start of the study, and, although NEET status was highly variable over time, the proportion of participants with NEET status at 18 months (30.4-39.5%) did not improve. The proportion of participants with NEET status was slightly higher than previously reported in samples of young people with BPD pathology, respectively 33.1% and 24.4% (50,51), and much higher than the rate of NEET among young Australians (aged 15 to 29, inclusive) from the general population, 11.8% (224). One possible

explanation for this is that all participants in the current study had case-level BPD, whereas previous studies have included mixed samples with case-level and sub-syndromal BPD pathology.

Consistent with previous studies, older age, and substance use were significantly cross-sectionally associated with being NEET at baseline (52,225). Similar to the finding that not commencing tertiary education was associated with being NEET (52), failure to meet age-appropriate educational milestones was associated with baseline NEET in this sample. Consistent with Caruana and colleagues' study (52), but contrasting with O'Dea's (225) findings, an association between severity of depressive or BPD symptomatology and NEET status was not found. However, when examining NEET status longitudinally, the BPD domains of interpersonal relationships and/or unstable identity were found to predict NEET group (staying or becoming NEET by 18-months) and Unstable NEET ($\geq$2 status changes) membership. This confirms earlier findings showing that the BPD domains relating to self and interpersonal functioning were significantly related to impaired psychosocial functioning (210,226).

Not achieving the age-appropriate educational milestone consistently predicted NEET status, both in our sample and in a previous study (52). Interestingly, not achieving educational milestones in our sample specifically predicted NEET status but not Unstable NEET status, compared with the non-NEET group. This may be because of the instability of NEET status in the Unstable NEET status group. Also, the milestone variable was correlated with both age and NEET. It might be that vocational dysfunction is more 'visible' when normative educational milestones are not achieved, particularly when the legal school leaving age in Victoria is 17 years and that young people must attend a school campus

until the completion of Year 10. However, it might also be that vocational dysfunction is 'scarred' by dysfunction at a younger age, affecting later vocational functioning (1,227).

Taken together, the present findings show that NEET status is high among outpatient young people with BPD, early in the course of the disorder, and that NEET status is unlikely to improve during routine early intervention, even when this successfully improves BPD features, self-harm or other psychopathological variables. Specialised and targeted interventions might be required (208,228) to improve vocational functioning early in the course of BPD to prevent enduring vocational impairment (1,227).

Strengths and limitations

To the authors' knowledge, this is the first longitudinal study examining predictors of vocational disengagement among outpatient young people with BPD. The study was conducted with a relatively large and well-characterised sample, with the broad inclusion criteria, and multiple time points. Therefore, it is likely to reflect a 'real-world' clinical sample of young people with BPD over an 18-month period.

However, there are several limitations. First, all participants in the present study were diagnosed with threshold BPD (≥ 5 criteria), limiting the variability in severity of BPD. This might explain, to some extent, the difficulty finding any associations between NEET status and BPD criteria. Second, the participants in the present study are likely to be establishing educational and occupational goals and therefore, NEET status was highly variable, likely making it more difficult to distinguish clear NEET/non-NEET states. Although more challenging to categorise, examining NEET in young people is important because intervening earlier to

address vocational dysfunction is likely to yield better results than delaying intervention. Furthermore, in the present sample, 22% of participants were lost to follow-up by 18-months. These missing occupational and educational status values have been imputed which might have biased the outcomes. Previous work from our group indicates that the most unwell young people are the most difficult to follow up (229), leading to an underestimate of severity. Moreover, it is possible that frequent changes in NEET status might reflect the instability of BPD, making it likely that those lost to follow-up are NEET. Third, while this study categorised homemakers as non-NEET, other studies have considered homemakers to be NEET (225). Therefore, compared with such studies, the current study might have underestimated the number of participants who are NEET.

CONCLUSIONS

The present findings show that NEET status in young people with BPD did not improve over time, despite being offered early intervention. This emphasises the need for vocationally targeted intervention as part of standard treatment. The findings of the present study suggest that intervention to improve educational and occupational engagement needs to happen as early as possible in the course of the disorder, with missing educational milestones being a likely signal that such an intervention is indicated. Future studies are warranted to explore how to prevent young people from disengaging from the education system and thus missing educational milestones, which could potentially include targeting the BPD domains of interpersonal relationships and identity disturbance. Furthermore, factors that contribute to the variability in NEET status over time should be

examined, and the effectiveness of vocationally targeted interventions should be tested.

Author disclosures

Competing interests
The authors declare that they have no competing interests.

Chapter 6

Employment in personality
disorders and the effectiveness
of Individual Placement and
Support – outcomes from a
secondary data analysis

Trees Juurlink
Femke Lamers
Hein van Marle
Harry Michon
Jooske van Busschbach
Aartjan Beekman
Han Anema

ABSTRACT

Personality disorders (PDs) are associated with severe functional impair-
ment and subsequent high societal costs, increasing the need to improve
occupational functioning in PD. Individual Placement and Support (IPS) is
an effective, evidence-based method of supported employment, which
so far has been tested in various mixed patient populations with severe
mental illness (SMI, including PDs). However, the effectiveness of IPS for
PDs per se remains uninvestigated.

Data from the SCION trial were used, including 31 SMI patients
with PDs and 115 SMI patients with other primary diagnoses (primari-
ly psychotic disorders). First, the interaction effect of diagnosis (PD vs
other SMI) and intervention (IPS vs traditional vocational rehabilitation)
was studied. Second, in the IPS condition, difference between diagnostic
groups in time to first job was studied.

We did not find evidence of a moderating effect of PD diagnosis on
the primary effect of IPS (proportion who started in regular employment)
(OR=0.592, 95%CI=0.80-4.350, p=0.606) after 30 months. Also, PD diag-
nosis did not moderate the effect of time until first job in IPS.

From the present explorative analysis we did not find evidence for
a moderating effect of PD diagnosis on the effectiveness of IPS among
PD participants. This indicates that IPS could be as effective in gaining
employment in participants with PD as it is in participants with other SMI.
Future studies, implementing larger numbers, should confirm whether IPS
is equally effective in PDs and study whether augmentations or alterations
to the standard IPS model might be beneficiary for PD.

INTRODUCTION

Personality disorders (PDs) are characterized by enduring dys-functional patterns of cognition, affect regulation, interpersonal and self-functioning and impulse control. These dysfunctional patterns are inflexible, pervasive across a broad range of personal and social situations and cause considerable personal distress (9). PDs affect about 6% of the general population (230) and about 45% of psychiatric outpatients (15,16). PDs are associated with functional impairment and unemployment (33−35). Symptoms of PDs tend to diminish over time and PDs are responsive to treatment, however occupational functioning tends to remain poor irrespective of clinical symptom remission and adequate treatment (44,189). Moreover, early unemployment and func-tional impairment in PDs exceed that of mood and anxiety disorders (18,33,131,152). Since all PD subtypes are associated with impaired occupational functioning, it has been advocated to specifically target employment in treatment programs for PDs (3). Currently within the Netherlands, a small number of patients with PD receive supported employment, mostly in assertive commu-nity treatment settings (not specialized in PDs). This provides an opportunity to explore the effectiveness of supported employ-ment programs in PDs.

Hengartner and colleagues (2014) showed that all PD sub-types are at least weakly associated with a low educational level, conflicts in the workplace, dismissal or demotion and unem-ployment. Furthermore, PDs are typically associated with deficits in interpersonal functioning characterized by a solitary lifestyle, conflictual and distressful social relations and lack of social support (104). In persons with PDs, difficulties in gaining and maintaining employment could be related to specific deficits in

interpersonal functioning. This may require adjusted or additional strategies to a standard supported employment model.

A well-established evidence-based method of supported employment is Individual Placement and Support (IPS), which originally focused on participants with severe mental illnesses (SMI) (80). The method centers on the principle of direct employment without preceding training. Furthermore, it focusses on participants' preferences and the assumption that everyone with a wish to gain employment should have the opportunity to find regular paid employment (81,201,203). So far, IPS has been studied in various groups, such as patients with psychotic and affective disorders, veterans and patients within forensic mental health care (82−87,202). Lack of information about PDs in IPS studies may be due to under-detection of PD in this population.

In short, it remains unknown whether IPS is as effective for patients with PDs as for other patients with SMI. Therefore, the aim of this study is to explore whether PDs moderate the effectiveness of IPS. Traditionally IPS does not address the interpersonal problems hindering participants with PDs (80). Therefore, we hypothesize that IPS is less effective in PD as compared to other SMI resulting in a lower number of participants finding competitive employment. Furthermore, since PDs are associated with conflicts in the workplace and dismissal and demotion (3), we expect that participants with PD have a longer time to gaining employment compared to participants with SMI.

METHODS

Design
Data from the first multisite randomized controlled trial studying IPS in the Netherlands (a Study of Cost-effectiveness of IPS on Open employment in the Netherlands, [SCION]) were used to perform a secondary data analysis. The SCION study was registered in the Netherlands Trial Register (Trial ID NTR292; ISRCTN87339610) (207).

Sample and procedures
Participants were recruited from four regional community mental health care divisions targeted at adults with severe mental illnesses. The mental health agencies operated in different areas in the Netherlands with various degrees of urbanization. Team staff consisted of psychiatrists, psychologists, community psychiatric nurses and other personnel, such as rehabilitation workers. The majority of mental health services were provided in the community, applying assertive outreach. Participants were found eligible when meeting the following criteria: 1) age ranging from 18 to 65 years, 2) explicitly wishing to gain competitive employment, and 3) willing to provide informed consent. Participants were excluded when they were: 4) having paid work at study entrance, 5) full-time hospitalized, 6) engaged in another professional vocational rehabilitation program model, and 7) participating in another study with conflicting interests. All participants approved written informed consent for the study. For rationale, objectives and methods of SCION, see Michon and colleagues (2014).

Participants were allocated to two comparison services, either IPS or traditional vocational rehabilitation (TVR) as the control

condition (explained below). After assessing eligibility and before the start of the baseline interview participants were informed again about study consequences and asked to sign informed consent. Randomization was performed by an independent agency using a stratified block randomization procedure, with site and employment history (paid employment in the past 5 years yes/no) as stratification factors. Randomization outcomes were sent to the research team and the local research coordinators at once. Each participant received €10 (approximately $14 U.S.) per completed interview.

For the present analysis, diagnostic information (DSM codes) had to be available. Five participants with missing DSM codes were excluded from the analyses, resulting in a total of 146 participants. Thirty-one participants were diagnosed with a PD by clinicians of the mental health agencies involved, of which 14 received IPS and 17 TVR. Of the 31 PD participants, 21 were primarily diagnosed with a PD and 10 had a secondary PD diagnosis (of which 1 paranoid PD, 1 schizoid PD, 7 borderline PD, 3 avoidant PD, 3 dependent PD, and 16 with not otherwise specified PD). Furthermore, of the 31 PD participants, 25 had concurrent Axis I disorders (of which 12 a psychotic disorder, 3 bipolar, 2 autism spectrum, 2 borderline intellectual functioning, and 6 other Axis I disorders). One-hundred-fifteen participants had no PD but had other SMI (Axis I) diagnoses (of which 56% was diagnosed with a psychotic disorder). Participants in both conditions were comparable where primary diagnoses was concerned.

Interventions
The intervention IPS was implemented according to protocol (231), with employment specialists as members of multidisci-

plinary community mental health teams. Employment specialists pro-actively assisted people in gaining jobs by offering follow-along support, focused solely on regular paid employment, spending most of the time in the community and operating in close collaboration with the other community mental health team members (231).

The control condition TVR was facilitated by the mental health agency in separate rehabilitation centers or by public services. These services offer stepwise vocational trajectories, with a stronger emphasis on lengthy assessment of individual competencies and on connecting to prevocational activities such as voluntary jobs before placement in regular paid employment. These program characteristics are in contrast with the rapid job search, short assessment and minimum of prevocational training in IPS. Also, the TVR staff did not participate in the mental health teams. In the Netherlands, regardless of type of psychiatric disorder, everyone is eligible for vocational rehabilitation (zero exclusion).

During the study all sites were monitored on IPS model fidelity three times (at 6, 24 and 42 months) by means of the Quality of Supported Employment Implementation Scale (QSEIS) (232). Two sites showed 'good-high' fidelity and two sites were found to have 'moderate' fidelity (207,233).

Measures

As in previous studies on IPS, the main outcome was the proportion of participants who were competitively employed during the study follow-up, dichotomously measured as having worked in competitive employment yes or no for one day or more (234). In the SCION study, all outcome measures were assessed at baseline and during a 30-month follow-up period at 6, 18 and 30

months (207). The time-points were chosen based on previous international IPS trials (203). Diagnostic information was gathered from practitioners that were involved in the treatment of the participant (e.g. practitioner or case worker) and derived from clinical diagnoses which were made based on DSM-IV diagnostic criteria. Competitive employment was defined as having a paid job at prevailing wage, not set aside for persons with a disability, in an integrated work setting (234). Information was derived from interviews and employment records filled out by employment specialists every two months. The employment records contained further information on dates to first job. Also quality of life by means of the MANSA (235), self-esteem by the Rosenberg Self Esteem scale (236) and the Mental Health Inventory-5 (237) for mental health were assessed during each measurement wave. Data collection procedures were identical across the control group and the intervention group.

Analysis

An intention to treat analysis was used. Analyses were performed using SPSS (Version 24.0, Armonk, NY: IBM Corp.). For the present analysis we divided the group in participants with a personality disorder (PD) and participants with another severe mental illness (SMI) based on DSM codes provided in the dataset (238).

First, descriptive analyses were used to reveal sociodemographic similarities and differences between groups (PD versus other SMI) using the appropriate test (chi-square test, t-test or Mann Whitney U Test). The number of participants in competitive employment among both groups was described cumulatively by each follow-up measure in IPS and TVR. Thus, the cumulative proportion of the percentage employed at T30 means that

the percentage of the considered group has found competitive employment at any time between T0 and T30. Analyses were done for each follow-up period separately as well as combined. Second, the primary outcome analysis was repeated in the present sample using logistic regression and to test the interaction of diagnosis (PD) with intervention (IPS). Third, the primary outcome of the second question was the total number of days until obtaining competitive employment during the 30-month follow-up period, serving as the dependent variable. Cox regression was used to calculate the Hazard Ratio (HR) and 95% confidence interval. The event was defined as starting a competitively employed job for the duration of at least one day. Participants were censored when they did not start a competitive job within the 30-month follow-up. If participants were lost to follow-up before starting competitive employment or the end of the study, they were censored based on the last record. For some participants the last record date extended a 30-month time period due to a prolonged interview date. This caused the analyses to be based on time periods exceeding 915 days (the average number of days in 30 months). Effect modification was investigated by the interaction term PD diagnosis * intervention (intervention vs control). All analyses used two-tailed testing procedures with 0.05 alpha levels.

RESULTS

Participants
The participants of both the PD and other SMI group were equally randomized across intervention and control condition (14 IPS/17 TVR). No significant differences in baseline characteristics between groups were observed, see Table 1.

Table 1 Sociodemographic and clinical characteristics and self-report measures at baseline in the PD (n=31) and other SMI group (n=115).

	PD (n=31)	Other SMI (n=115)	*p*-value
Sociodemographic characteristics			
Male (%)	64.5	76.5	0.176
Mean age (SD)	36.2 (8.7)	34.6 (10.7)	0.280
Married/registered partners (%)	3.2	10.4	0.366
Paid employment in past 5 years (%)	67.7	59.1	0.383
Worked competitively in past 5 years (%)	54.8	51.3	0.727
Mean # months worked in past 5 years (SD)	24.6 (16.2)	17.6 (16.6)	0.109
Clinical characteristics			
Ever admitted to mental health hospital (%)	71.0	76.5	0.524
Self-report measures			
Mean score MANSA (self-reported Quality of Life) (SD)	4.2 (1.00)	4.3 (0.8)	0.811
Mean score RSE (self-reported self-esteem) (SD)	23.1 (7.1)	21.5 (4.1)	0.675
Mean score MHI-5 (self-reported mental health) (SD)	71.5 (12.7)	76.6 (11.6)	0.058

PD: Personality Disorder; SMI: Severe Mental Illness.

Employment outcomes between participants with PD and other SMI

After 30 months in IPS, 35.7% of PD participants were competitively employed compared to 47.3% of other SMI participants. In TVR, 11.8% of PD participants were competitively employed compared to 25.0% of the SMI participants (Table 2). Although PD participants - both in IPS and in TVR at each follow-up - less often gained competitive employment compared to participants with other SMI, differences were not statistically significant. Note that, based on the number of participants (n=31, n=115) and effect sizes found in each group (.357 and .473) (Cohen's h=0.24), a power calculation revealed small power 0.22 (R pwr package). Therefore, the results of our secondary, exploratory analyses should be interpreted with caution.

Table 2. Cumulative employment outcomes per condition in the PD (n=31) and other SMI (n=115) group.

	PD (n=31)		Other SMI (n=115)		*p*-value*
Employment outcomes	IPS (n=14)	TVR (n=17)	IPS (n=55)	TVR (n=60)	
Number of individuals in intervention-arm IPS (%)	14 (45.2)	n/a	55 (47.8)	n/a	0.816
Number of persons who found competitive employment within 6 months (%)	2 (14.3)	0 (0)	13 (23.6)	8 (13.3)	0.091
Number of persons who found competitive employment within 18 months (%)	4 (28.6)	1 (5.9)	24 (43.6)	13 (21.7)	0.534
Number of persons who found competitive employment within 30 months (%)	5 (35.7)	2 (11.8)	26 (47.3)	15 (25.0)	0.459

PD: Personality Disorder; SMI: Severe Mental Illness; IPS: Individual Placement and Support; TVR: Traditional Vocational Rehabilitation.
*Chi–square tests comparing competitive employment outcomes in intervention arm (IPS) for PD versus other SMI group; n/a: Not applicable for participants in column.

Individual Placement and Support in personality disorders

As previously reported by Michon and colleagues (2014), we found that IPS was significantly associated with finding employment any time during follow-up (OR=0.430, 95%CI=0.216 – 0.857, p=0.017). First, to test whether being diagnosed with a PD modified this outcome we added the interaction term group (PD vs other SMI) by intervention (IPS vs TVR). This interaction term was not statistically significant (OR=0.592, 95%CI=0.080 – 4.350, p=0.606).

Time to first job in Individual Placement and Support

Second, a Cox regression was performed to study the difference in time to first job between the two groups (Figure 1). The association between having a PD diagnosis and time to first job was not significant (HR=0.520, 95%CI=0.234 – 1.159, p=0.110). Also, we did not find evidence for a moderating effect of PD on the association between IPS and time to first job (HR=0.546, 95%CI=0.094 – 3.156, p=0.499).
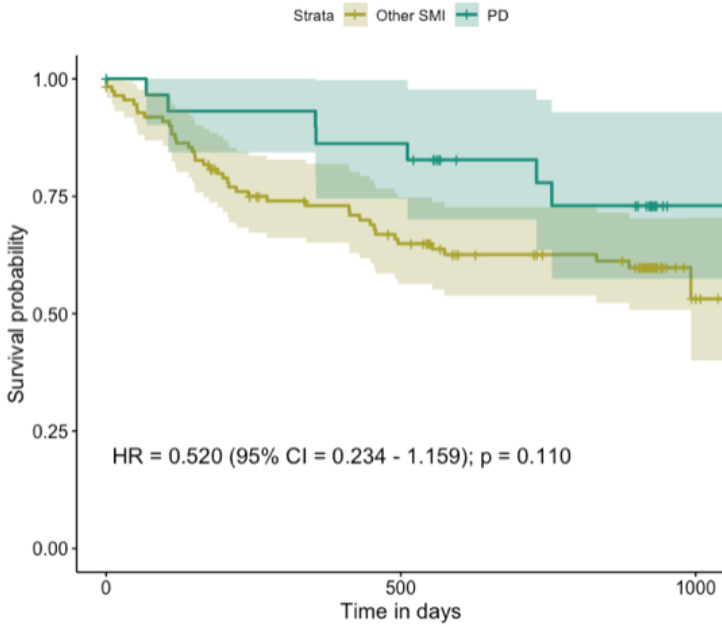
Fig. 1 Cumulative survival of time in days to first job in IPS
PD group, group diagnosed with personality disorders;
Other SMI group, group diagnosed with other severe mental illnesses;
HR, Hazard Ratio, CI, Confidence Interval

DISCUSSION

Although PDs are widespread and associated with severe impairments in occupational functioning, very little is known about the effects of standard interventions of supported employment among participants with PDs. We were able to conduct a secondary analysis testing whether PD diagnosis modifies the effect of IPS on finding a job in a RCT among participants with SMI, including a group of 31 participants with PDs. We did not find evidence of a moderating effect of PD on the primary effect of IPS on gaining employment, suggesting that IPS could be as effective in participants with PD as it is in participants with other SMI. This is important, as it would open up a much needed avenue to improve employability among people with PD.

Interpretation of the study findings and comparison with the literature

The statistical power of the present study was too low, due to an exploratory character of the study based on post hoc exploratory analysis. Therefore, the findings should be interpreted with caution. However, contrary to our hypotheses we show that there were no differences on the primary effect of IPS and time to first job between the PD and other SMI group. This could be explained by the fact that the present study was underpowered. Yet, it may also demonstrate that it is difficult to obtain employment for persons with SMI regardless of diagnosis. However, with IPS some of the barriers to employment in SMI are alleviated, such as distance to the labor market and lack of work experience (due to illness) (239), and context related barriers such as stigma (240) and the benefits trap (the financial disincentive to return to competitive employment and thus lose social security benefits) (203,241). In

previous studies success rates of IPS in different patient groups varied. For example, IPS in participants with SMI and justice involvement showed lower employment rates and total days of employment in IPS compared to IPS studies in SMI populations without justice involvement. Still, IPS was significantly better compared to the control condition with prevocational training and guidance (202). Additional studies with adequate power will be needed that study whether IPS is equally effective in PD as it is in other SMI participants.

The present findings potentially indicate that participants with PD might benefit from augmentations or alterations to IPS since a lower number of participants in the PD group found competitive employment compared to the other SMI group in time to first job. Although, this difference was not significant we would like to explore potential augmentations to a standard IPS program specifically geared towards PDs. For example, it has been suggested that individuals with schizotypal PD and paranoid PD might benefit from social skills or social cognition training to improve social competence and the ability to recognize and interpret social cues in work-related situations (37). This may also hold for other PD categories. Furthermore, effective psychotherapeutic interventions in PDs are (at least in part) geared towards challenging dysfunctional cognitions and acquiring behavioral skills to improve interpersonal and social functioning (189). The methods used in these therapies might be partly integrated in the standard IPS program to better support PD patients and the employment specialists in assisting them. For example, employment specialists could be trained in exploring dysfunctional cognitions in stressful work-related situations with elements of cognitive behavioral therapy or aim

to improve behavioral skills specifically aimed at interpersonal functioning at work.

However, the present study did not find that PD diagnosis moderated the effectiveness of IPS. The heterogeneity in PDs, such as borderline PD, antisocial PD or avoidant PD, each with its own symptoms, can make studying PDs as one group difficult. McGurk and colleagues (37) showed that patients with schizotypal and paranoid PD were most severely impaired in occupational functioning compared to other PDs due to cognitive impairment. In the present study, there was only one participant diagnosed with paranoid PD and none with schizotypal PD, conceivably due to less willingness to participate among these patients. However, other studies found all PD categories to be, at least to some extent, associated with occupational impairment (3,24,242). Unfortunately, in our study, differences between PD diagnoses could not be analyzed due to the small number of participants within groups and severity was not taken into account. Furthermore, Yang and colleagues (24) suggested that not the PD diagnosis itself but the severity of the symptoms is positively related to the extent of occupational impairment. In line with most previous IPS trial samples (243–246), predominantly men were included in the present study. We did not identify previous studies examining the question as to why males are overrepresented in most IPS samples. Killackey and colleagues (247) prompted there might be cultural reasons for males to seek work more than females, and that case managers might prioritize work for males rather than for females. However, future studies should examine this question.

Strengths and limitations

To our knowledge this is the first exploratory study investigating the effectiveness of IPS in participants with PD as compared to other SMI. Nevertheless, there were also limitations to acknowledge. First, the power for comparing the groups studied in the present analysis was low. Specifically, the group of IPS participants with PD was small which hampers the interpretation of the findings. Second, no standardized assessment of PD was performed which affects accuracy of PD diagnoses. Third, not all PD categories were represented in this study, likely leading to under-classification and underestimation of the effects of PDs. Also, in groups with high heterogeneity, such as this PD group, it is more difficult to find moderating effects. Furthermore, from the present findings we were unable to generalize to all PDs. In addition, different PD categories have presumably different implications for occupational functioning. This is not assessed in the present study due to low numbers in the separate PD categories. Fourth, as previously argued severity of personality disorder symptoms plays a pivotal role in the degree of functional impairment (3,151). However in the present study severity was not assessed. Finally, it would have been informative to present other employment outcomes, such as the number of hours and days worked between groups. However, due to missing data, we had insufficient information to address these comparisons.

Conclusions and Implications for Practice

In short, our findings suggest that there are no indications that having a PD diagnosis moderates the effect of IPS. Future studies examining the effectiveness of IPS in PD should include larger number of participants (representing all subtypes) with sufficient

power to analyze the subtypes, examine multiple employment outcomes, and study whether participants with PD might benefit from specific augmentations or alterations to the standard IPS trajectory. In addition, the impact of severity of PD on outcomes could be measured, and IPS could be studied in treatment set-tings specifically geared towards PDs.

Author disclosures

Chapter 7

Individual Placement and Support and Employment in Personality Disorders: a registry based cohort study

Trees Juurlink

Femke Lamers

Hein van Marle

Wim Zwinkels

Marcel Spijkerman

Aartjan Beekman

Han Anema

ABSTRACT

This study aimed to test the effectiveness of Individual Placement and Support (IPS) in patients with personality disorders (PDs) as compared to patients with other mental disorders. Data from the Dutch Employee Insurance Agency of participants enrolled in a national IPS trajectory between 2008 and 2018 were linked to corresponding data on employment outcomes, diagnostic and sociodemographic information from Statistics Netherlands. This resulted in a sample of 335 participants with PDs who could be compared with 1,073 participants with other mental disorders.

The primary outcome was the number of participants in competitive employment for at least one hour during the three-year follow-up. Secondary outcomes were time to gaining employment (in number of days) after start of the IPS trajectory, and total number of paid hours during the IPS intervention.

Participants with PDs just as often found competitive employment as participants with other mental disorders (37.6% vs. 38.0%, ORadjusted=0.971, 95% confidence interval (CI) 0.741 to 1.273). The median time to gaining employment in days was 1095.0 days in both groups (HRadjusted=0.954, 95% CI 0.774 to 1.177). Also, number of hours paid for competitive employment did not differ significantly between groups (median hours 686.3 vs 781.5, IRRadjusted=1.177, 95% CI 0.953 to 1.454).

Based on this study, which is the largest in the literature, IPS seems to result in an equal percentage of patients with PDs and other mental disorders gaining and maintaining employment. Although future studies should determine whether PD-specific adaptations to IPS are useful, our findings indicate that IPS could be an effective way to reduce occupational dysfunction in PDs. This is important because the enormous societal costs of PDs are largely driven by loss of economic productivity, and because clinical recovery in PDs is enhanced when patients are employed.

INTRODUCTION

Personality disorders (PDs) are severe mental illnesses charac-terized by deviating patterns of inner experience and behaviour in the areas of cognition, affect regulation, interpersonal- and self-functioning, and impulse control. Typically, maladaptive behavioural patterns are inflexible, present across a broad range of social and personal situations and cause considerable personal distress (9). PDs are associated with impaired occupational func-tioning and unemployment (3,33,34), and although symptoms of PDs tend to diminish over time and treatment of PDs is effective, occupational functioning tends to remain poor irrespective of symptom remission (44,46,189). Still, few studies report on the factors that contribute to occupational dysfunction in PDs. In our previous qualitative study exploring barriers and facilitators to employment in borderline personality disorder (BPD), we show that maintaining employment is considered more difficult than gaining employment by both patients and professionals (248). In this study, the characteristics of BPD that impeded occupation-al functioning mainly related to interpersonal functioning and emotion regulation. Considering all PDs, the shared hallmark symptom of having difficulty with interpersonal relationships is suggested to be the central factor of occupational dysfunc-tion (36). This is different from for example, psychotic disorders, where positive and negative symptoms and low expectations hindered employment (96), or from affective disorders, where a lack of motivation prevented successful employment (97).

Individual Placement and Support (IPS) is a well-established evidence-based method of supported employment based on the first place, then train principle, originally developed to support patients with severe mental illnesses (80). The method focusses

on participants' preferences and the assumption that everyone willing to gain employment can find regular paid employment (81,201,203). To receive IPS in the Netherlands, participants need to be in mental health treatment, unemployed, and express a wish to gain regular paid employment. Ample evidence shows effectiveness of IPS in various groups, such as patients with psychotic and affective disorders, patients within forensic mental health care, patients with substance use, musculoskeletal and neurological disorders, and veterans (81,82,89). IPS, however, has not been directly studied in patients with PDs. In an exploratory secondary analysis of a small randomized controlled trial of IPS in a large mixed patient group in the Netherlands, no difference in effectiveness of IPS was found between patients with PDs and patients with other mental disorders (249). This suggests that IPS may be effective also for PDs, although the total number of PD patients in this study was too low to draw any definitive conclusions.

In this study we link datasets from the Employee Insurance Agency (UWV), holding data of all participants enrolled in a national IPS trajectory in the Netherlands and Statistics Netherlands (CBS) which holds register data on employment outcomes, diagnostic and sociodemographic information of the corresponding participants. This provides a unique opportunity to test whether IPS is as effective in patients with PDs as compared with patients with other disorders in a large cohort of well-documented cases. Specifically, we test whether both groups of patients differ on: i) gaining employment for at least one hour during study follow-up, ii) time in days to gaining employment, and iii) duration of employment in cumulative number of hours worked.

METHODS

Design

A registry-based cohort study examining employment outcomes in records of IPS participants, comparing effectiveness between participants with a PD and participants with other mental disorders. Data from the UWV containing information on enrolment and commencement of a national IPS trajectory with inclusion from 2008 to 2018 were linked to data of the CBS containing employment records from 2008 to mid-2019, and records of DSM-IV diagnosis from 2011 to 2016.

Participants and data linkage

The current study population was restricted to IPS participants in the UWV registry of whom a DSM-IV diagnosis could be retrieved from the CBS dataset (see Fig 1). Using anonymized personal identification numbers, data of the CBS were linked to the anonymized IPS records of the UWV from 2008 to 2018. All participants in IPS with a DSM diagnosis of any mental disorder classified as a severe mental illness including among others: psychotic, depressive, affective, pervasive developmental disorders, and were included in the analyses and defined as other mental disorder group. Data on employment records of the CBS were from January 2008 until June 2019 and included: 1) dates of entrance into employment, 2) type of employment (competitive or sheltered employment), 3) number of hours worked in paid employment including overtime, without surcharges and time off for overtime hours. Diagnostic information was based on mental health care registered DSM-IV data from the CBS from 2011 to 2016. For the IPS trajectories starting between 2008 and 2011 the first available DSM-IV diagnosis following the start of IPS was

used. Conversely, for the IPS trajectories starting after 2016, the last available diagnosis was used. PD diagnosis was a dichotomous variable, counting any occurrence of a main or secondary PD diagnoses recorded between 2011 and 2016. The group never receiving any PD diagnosis was assigned to the other SMI group. We opted to assign all participants who were registered to have a PD diagnosis at any time during the registration period to the PD group because personality psychopathology in adults tends to be more stable as compared to symptoms of axis-I psychopathology (250), and misclassification of PDs is common (10). In the Netherlands, and according to IPS model fidelity, IPS participants are supported for three years, which subsequently was the follow-up period for the present study.

Measures
The primary outcome was the proportion of participants who were competitively employed during the study follow-up. This was dichotomously measured as having worked in competitive employment for one hour or more. Competitive employment was defined as having a paid job (not a sheltered job) based on CBS database records of paid contract hours. Secondary outcome measures were time to gaining employment and duration of employment. Time to gaining employment was based on the number of days between starting the IPS trajectory and starting competitive employment as identified from the first payment record. Duration of employment was based on the cumulative number of hours paid in competitive employment among those in competitive employment during IPS follow-up.
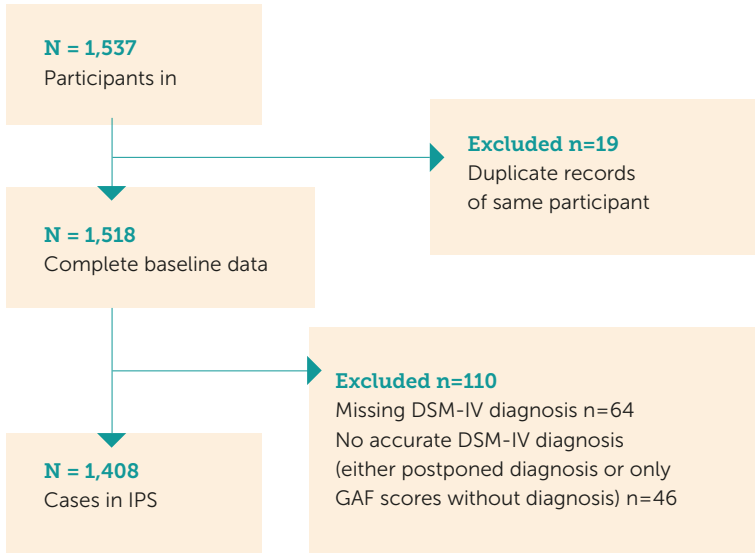
N = 1,537
Participants in

Excluded n=19
Duplicate records
of same participant

N = 1,518
Complete baseline data

Excluded n=110
Missing DSM-IV diagnosis n=64
No accurate DSM-IV diagnosis
(either postponed diagnosis or only
GAF scores without diagnosis) n=46

N = 1,408
Cases in IPS

Figure 1. Flowchart of excluded cases and study sample.

Covariates

Like previous studies on occupational functioning in mental disorders, the following potentially confounding variables were included: gender, age, nationality (Dutch, Western, non-Western) and employment history (competitively employed in the past 5 years before entering the IPS trajectory yes/no) (42,144,251,252). Although education level is associated with occupational functioning in mental disorders (101), unfortunately we did not have access to this information and could not analyse education as a putative confounding variable in the present study.

Statistical analysis

Sample characteristics were explored and presented as frequencies, and percentages, with medians and interquartile ranges (for non-normal distributed variables). Differences between groups (PD versus other mental disorders) were tested with Chi-square or Mann Whitney U tests. Additionally, we described and tested differences in gaining employment between different patient groups (schizophrenic and psychotic disorders, personality disorders and other mental disorders). The primary outcome measure - gaining competitive employment for at least one hour during the IPS trajectory - was analysed with logistic regression. Time to employment in number of days was studied with Cox proportional hazards models of which the assumptions were checked and satisfied. Participants were right-censored if they did not gain a job within the three-year follow-up. Within those in competitive employment (n=534), the cumulative number of hours worked was compared between groups with Poisson regression by means of a negative binomial distribution due to underdispersion. For this analysis the values of the outcome variable need

to be round integers. Therefore, the 13% with decimal values were rounded to the nearest integer. Furthermore, the negative binomial regression was corrected for the number of weeks in follow-up because the amount of time in follow-up might bias the outcome. The pattern of follow-up did not significantly differ between groups. Finally, all analyses were run both unadjusted and adjusted for gender, age, nationality and employment history.

A few factors could potentially influence analyses. First, a few participants entered an IPS trajectory twice, which could potentially affect the outcomes on employment because these individuals might have gained experience in gaining and maintaining employment from their first IPS trajectory. Second, for a number of participants the IPS trajectory follow-up was still ongoing. These cases might gain employment in the future and therefore the long-term effects of IPS in the present study may be underestimated. Third, as previously described the group ever reporting a PD was assigned to the PD group. This group, however, might have reported another mental disorder before, during or after the IPS trajectory which might bias the accuracy of the results. Therefore, sensitivity analyses were conducted to evaluate the robustness of our findings. For this, all analyses described above were also conducted: 1) in the participants excluded from the main analysis that had had two IPS trajectories (including n=1 in PD, and n=24 in other SMI, total sample n=1,433), 2) with exclusion of cases of which the IPS trajectory was still ongoing (n=66 in PD, n=194 in other SMI, total n=1,148), and 3) with exclusion of cases of which the last registered diagnostic information was not a PD although they were assigned to the PD group (96 cases, 28.7% of total sample) (n=1,312). All statistical analyses were performed using SPSS version 24.0 or Rstudio version 3.6.2.

RESULTS

Characteristics of the study population
The study population included 1,408 participants with a IPS trajectory that was initiated between 2008 and 2018 in the Netherlands. Of these, 335 participants had a PD diagnosis and 1,073 participants had another mental disorder as diagnosis. Table 1 presents the characteristics of both groups. The largest proportion of participants in both groups was between 26 to 35 years of age and had the Dutch nationality. Gender, age and nationality differed significantly between groups.

Table 1. Sample characteristics of IPS participants (n=1,408).

	PD N=335	Other SMI N=1,073	*p*-value
Female gender, n (%)	192 (57.3)	309 (28.8)	**<0.001**
Age, mean (SD)	37.17 (8.8)	35.3 (9.0)	**<0.001**
19-25 years, n (%), mean (SD)	19 (5.7) 24.0 (1.3)	155 (14.4) 23.2 (1.7)	
26-35 years, n (%), mean (SD)	143 (42.7) 30.4 (2.8)	442 (41.2) 30.5 (2.9)	
36-45 years, n (%), mean (SD)	106 (31.6) 40.0 (2.8)	310 (28.9) 40.0 (2.9)	
46-64 years, n (%), mean (SD)	67 (20.0) 50.8 (4.0)	166 (15.5) 50.3 (3.8)	
Nationality, n (%)			**<0.001**
Dutch	277 (82.7)	714 (66.5)	
Western immigrant	29 (8.7)	117 (10.9)	
Non-Western immigrant	29 (8.7)	242 (22.6)	
Employment history (employed in past 5 years), n (%)	184 (54.9)	574 (53.5)	0.647

PD: Personality disorders; Other SMI: other severe mental illness;
Significant p–values highlighted in bold.

Table 2. Descriptive characteristics of gaining employment per diagnosis group (n=1,408).

DSM-IV diagnosis	Total n employed (%)	*p*-value
		0.295
Schizophrenia and psychotic disorders	237 (36.2)	
Personality disorders	126 (37.6)	
Other mental disorders*	171 (40.9)	

*Among others affective and pervasive developmental disorders

Engagement in employment

At any time during the IPS follow-up, 37.6% of the PD participants were competitively employed for at least one hour versus 38.0% of those with other mental disorders. This is a negligible difference, resulting in a non-significant odds ratio (OR= 0.983, 95% CI 0.763 to 1.266, p=0.892) (Table 3). Although age (OR=0.981, 95% CI 0.968 to 0.993, p=0.002) and employment history (OR=2.147, 95% CI 1.716 to 2.685, p=<0.001) were significantly associated with the effect of IPS, adjustment for age, gender, nationality and employment history did not alter the results comparing between groups (OR=0.971, 95% CI 0.741 to 1.273, p=0.834).

Time to gaining employment

The data describing time to gaining employment in days was skewed to the right. Table 3 shows that the median time to gaining employment was 1095.0 days both in the PD and other mental disorders group with comparable interquartile ranges (HR=0.978, 95% CI 0.801 to 1.194, p=0.828) (Figure 2). Again in survival analysis, although age (HR=0.985, 95% CI 0.976 to 0.995, p=0.003) and employment history (HR=1.849, 95% CI 1.547 to 2.210, p=<0.001) were significantly associated with time to gaining employment in IPS, adjustment for age, gender, nationality and employment history did not affect the hazard ratio for group (HR=0.954, 95% CI 0.774 to 1.177, p=0.661) (Table 3).

Table 3. Employment outcomes of IPS participants and associations

	PD		
Finding competitive employment, n (%)	126 (37.6)		

	Model 1[a]		
	OR	95% CI	p-value
PD	0.983	0.763-1.266	0.892
Age	n/a	n/a	n/a
Female gender	n/a	n/a	n/a
Dutch nationality	n/a	n/a	n/a
Employment history	n/a	n/a	n/a

	PD		
Time to gaining competitive employment in days, median (IQR)	1095,0 (316.0 − 1096.0)		

	Model 1[b]		
	HR	95% CI	p-value
PD	0.978	0.801-1.194	0.828
Age	n/a	n/a	n/a
Female gender	n/a	n/a	n/a
Dutch nationality	n/a	n/a	n/a
Employment history	n/a	n/a	n/a

	PD		
Cumulative number of hours paid for competitive employment, median (IQR) (n=534)	686.3 (211.0-1404.0)		

	Model 1[c]		
	IRR	95% CI	p-value
PD	1.157	0.947-1.413	0.153
Age	n/a	n/a	n/a
Female gender	n/a	n/a	n/a
Dutch nationality	n/a	n/a	n/a
Employment history	n/a	n/a	n/a

of employment with group (n=1,408).

Other SMI		
408 (38.0)		

Model 2[a]

OR	95% CI	p-value
0.971	0.741-1.273	0.834
0.981	0.968-0.993	**0.002**
0.878	0.693-1.113	0.283
1.004	0.872-1.155	0.960
2.147	1.716-2.685	**<0.001**

1095.0 (278.0 – 1096.0)

Model 2[b]

HR	95% CI	p-value
0.954	0.774-1.177	0.661
0.985	0.976-0.995	**0.003**
0.873	0.728-1.074	0.144
0.996	0.895-1.109	0.945
1.849	1.547-2.210	**<0.001**

781.5 (261.0-1640.5)

Model 2[c]

IRR	95% CI	p-value
1.177	0.953-1.454	0.131
1.001	0.990-1.011	0.923
0.940	0.781-1.131	0.510
0.878	0.787-0.980	**0.020**
1.188	0.986-1.431	0.070

PD: Personality disorder; Other SMI: Other severe mental illness; IPS: Individual Placement and Support. Other SMI is reference OR: Odds ratio; 95%, HR: Hazard ratio, IRR: Incidence Rate Ratio of negative binomial regression, CI: 95% confidence interval.
n/a: not applicable.
Significant p–values highlighted in bold.
Model 1: unadjusted model;
Model 2: adjusted for age, gender, nationality and employment history;
a Logistic regression;
b Cox regression;
c Negative binomial regression.
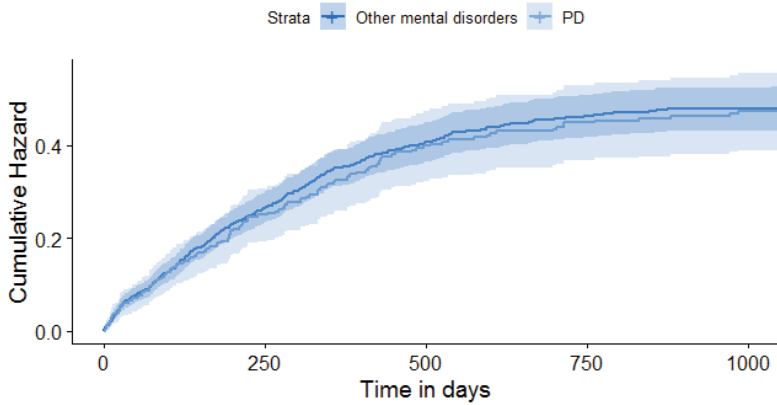
Figure 2. Cumulative hazard of time in days to first job in IPS (n=1,408).
IPS: Individual Placement and Support; PD: Personality Disorder; other SMI:
other severe mental illness.

Cumulative number of hours employed

The median number of hours employed for those in competitive employment (n=534) was 686.3 hours in the PD group and 781.5 hours in the other mental disorders group. Although nationality was associated with number of hours in competitive employment in IPS (IRR=0.878, 95% CI 0.986 to 1.431, p=0.020), adjustment for age, gender, nationality and employment history did not affect the results for group (IRR=1.124, 95% CI 0.913 to 1.384, p=0.269) (Table 3).

Most sensitivity analyses showed similar patterns in the same direction with non-significant group differences (not tabulated). Only the sensitivity analysis that excluded the cases with ongoing IPS trajectories (n=274) showed a difference between groups in cumulative number of hours employed. Participants with other mental disorders had worked significantly more hours compared to those with PDs (IRR=1.573, 95% CI 1.181 to 2.096, p=0.002), also when adjusting for age and gender (IRR=1.568, 1.145 to 2.147, p=0.005).

DISCUSSION

This study tested in a large, well-documented patient sample whether the effectiveness of IPS differs between participants with PDs and participants with other mental disorders. Patient groups did not differ in (time to) gaining employment nor in maintaining it, suggesting that IPS is an effective method of supported employment in PDs.

Particular strengths of the present study are the large sample size and our ability to link unique datasets on the nationwide implementation of IPS in the Netherlands over time. Only a fully

powered randomized controlled trial, which is both financially and logistically hard to conduct, is more informative. However, there are also limitations to consider. First, this was a prospective observational study, which implies that findings are open to bias and causal inference is limited. Second, due to differences in inclusion period for both data registers, misclassification may have occurred for some participants (see Methods). However, because PDs are longstanding disorders (250) that often remain underreported (10), the current effect sizes may be actually underestimated. Third, comorbidity with other disorders contributes to occupational dysfunction in PDs (46,252), yet we had insufficient data to study these effects in the present study. Finally, to study the actual effect of IPS in PDs (compared to other mental disorders), a control condition (e.g. treatment as usual) would be needed for both groups.

Using the largest and best-documented registry-based cohort available to date, we confirm and extend the findings of our previous exploratory study, by showing that not only (time in) gaining employment is equal between PDs and other mental disorders, but also the total number of hours worked (101). Although ample studies show effectiveness of IPS compared to treatment as usual, review studies suggest that augmentations to a standard IPS program that improve cognitive and psychosocial skills could improve occupational outcomes even more (84,91,92,95). This may be especially the case for patients with PDs in whom an additional social skills training may improve interpersonal functioning and problem solving at work.

This study makes an important contribution to both mental health care and occupational health by showing that IPS may be effective as a means of supported employment in patients with

PDs. PDs are common, debut in adolescence or early adulthood and persist over longer periods of time. Occupational functioning is crucial to the recovery of patients with PDs (35), and the immense societal costs associated with PDs are largely driven by loss of economic productivity (31,32). A next step would be to improve the availability and the use of IPS among patients with PDs. Furthermore, IPS should be tested within the treatment regimen of specific PD treatments and together with PD-specific augmentations to the standard IPS trajectory.

Author disclosures

Funding

Competing interests
The authors declare that they have no competing interests.

Chapter 8

Summary &
General Discussion

8

SUMMARY OF THE MAIN FINDINGS

In this section the main findings will be summarized per chapter. The general aim of this thesis was to contribute to the understanding of occupational functioning in personality disorders (PDs). More specifically, the first aim was to study the relationship between occupational functioning and BPD (symptoms), both in the general population and patient samples, described in chapters 2 to 5. The second aim was to study the extent to which Individual Placement and Support (IPS), an evidence-based method of supported employment, is effective in PDs as compared to other mental disorders, described in chapters 6 & 7. In this chapter, the main findings are first summarized and discussed, and subsequently integrated and discussed in light of current literature and potential clinical implications. Finally, directions for further research are suggested and an overall conclusion on the subject is given.

In this discussion, the term occupational functioning is used as the overall term describing work ability based on the outcomes of our studies, measuring both absenteeism and work performance while at work. In Chapter 3, we measured absenteeism and work performance separately, therefore, when referring to this measure, we use the term work performance. Also, in Chapter 5, we refer to vocational functioning because we studied both employment and educational outcomes in youth with BPD.

In Chapter 2 we examined the relationship between BPD symptoms of workers in the general population with working conditions and number of work loss days. We found that BPD symptoms were common (1-9 BPD symptoms in 27,2% of total sample) and consistently associated with more work loss days, even when controlling for common mental disorders and type

and number of adverse working conditions. Furthermore, BPD symptoms were associated with lower perceived decision latitude, job insecurity and lower co-worker support. Unexpectedly, BPD symptoms were not associated with more psychological job demands. Also, BPD symptoms were associated with a higher number of adverse working conditions. Our findings indicate that subthreshold BPD symptoms are common among workers in the general population and are associated with impaired work performance, independent of the type or number of adverse working conditions and concurrent common mental disorders.

In Chapter 3, building further on Chapter 2, we studied associations of BPD symptoms with work performance and absenteeism in patients with and without depressive and anxiety disorders. In this study, both depressive and anxiety disorders as well as BPD symptoms were important factors contributing to absenteeism and impaired work performance. However, the association between BPD symptoms and long-term absenteeism and both reduced and impaired work performance was no longer significant after adding severity of depression to the models. Therefore, this study suggests that the effect of BPD symptoms on absenteeism and impaired work performance could potentially be mediated by depression.

In Chapter 4 we qualitatively explored barriers and facilitators to employment in relation to BPD among patients, mental health practitioners and insurance physicians. Both barriers and (suggested) facilitators related to three themes: characteristics of BPD, stigma, and support to employment. Characteristics of BPD that hindered gaining and maintaining employment were low self-image, difficulty posing personal boundaries, difficulty regulating emotions, and lack of structure. Additionally, men-

tal health practitioners and insurance physicians mentioned externalization and overestimation of own competence on the part of patients. A suggested facilitator was enhancing emotion regulation and self-reflection according to all three groups. Stigma about BPD was both anticipated and experienced in patients. Furthermore, both professional groups realized that they themselves had little trust in patients' ability to sustainably gain employment. According to all three groups, collaboration between mental health and vocational rehabilitation services was limited, and increasing collaboration and knowledge about BPD would improve sustainable employment and diminish stigma.

In Chapter 5 we studied vocational disengagement, defined as not being in employment, education or training (NEET) among young patients with BPD (aged 15 – 25 years). We found that being NEET at baseline was associated with older age (> 18 years), not having achieved age-appropriate educational milestones, and substance use. NEET status changed frequently during 18 months of treatment. Therefore, we examined three groups: vocationally engaged (non-NEET), vocationally disengaged (NEET), and Unstable NEET status. Being NEET was predicted by not achieving educational milestones, unstable interpersonal relationship and unstable identity. Unstable NEET was predicted by unstable interpersonal relationships and unstable identity. Also, vocational engagement status did not improve after 18 months of treatment for BPD. Therefore, this study suggests that interventions aimed at improving vocational functioning in youth with BPD are cautioned in young people missing age-appropriate educational milestones, and should rather target the BPD domains interpersonal relationships and identity.

In Chapters 6 & 7 we examined whether occupational outcomes in Individual Placement and Support (IPS) trajectories among participants with PDs differed from participants with other mental disorders. In Chapter 6 data of the first IPS randomized controlled trial in the Netherlands (SCION) was used, including 31 participants with PDs and 115 participants with other mental disorders. First, we studied the interaction effect of diagnosis (PD versus other mental disorders) and intervention (IPS versus traditional vocational rehabilitation). We did not find that having a PD moderated the primary (positive) effect of IPS. Second, in the IPS condition we examined the difference between time to first job between diagnostic groups. Again, no differences were found between diagnostic groups. This study therefore indicated that IPS could be an effective method of supported employment for participants with PD. However, the power of this study was low. Therefore, in Chapter 7 we used data from the Employee Insurance Agency (UWV) linked to corresponding data of the Netherlands Bureau of Statistics (CBS) holding employment outcomes, diagnostic and demographic data of 1,408 IPS participants. Of these 1,408 participants, 335 participants were diagnosed with a PD and 1,073 participants were diagnosed with another mental disorder. Participants with PD found competitive employment just as often as participants with other mental disorders. Also, the time to gaining employment in days and total number of hours worked did not differ between groups. Considering the large sample size of the study, these findings support the preliminary findings of Chapter 6, indicating that IPS could be an effective method of supported employment in individuals with PDs.

DISCUSSION OF THE MAIN FINDINGS

In the following part we will integrate and discuss the main findings of the studies described above in relation to other literature.

Occupational functioning in workers with BPD symptoms: effect of working conditions and co-occurring mental disorders

Research in the past decade confirmed a cross-sectional association between BPD and impaired occupational functioning. However, studies examining possible mechanisms underlying the association between BPD and occupational dysfunction were lacking. The first four studies in this thesis focused on the relationship between occupational functioning and BPD (symptoms) both in the general population and patient samples. All studies strongly confirmed that BPD and BPD symptoms were associated with impaired occupational functioning. Our Chapter 2 study was the first demonstrating the association between adverse working conditions and BPD symptomatology among workers from the general population. Furthermore, this study demonstrated that even in workers of the general population BPD symptoms contribute extensively to occupational dysfunction. Also, BPD symptoms were associated with all working conditions, except for more psychological job demands. This is important as working conditions are also part of occupational functioning (68).

Since BPD symptoms in workers from the general population were associated with impaired occupational functioning, even when controlling for common mental disorders, we studied the similar question in a sample of workers with and without depressive and anxiety disorders (Chapter 3). This study confirmed that both BPD symptoms and depressive and anxiety disorders in workers were associated with impaired work performance at

work and more work loss days. However, when adding severity of depression to the model the association with BPD symptoms disappeared. The fact that the cohort used primarily consisted of patients with depression and anxiety (and controls), and did not have many patients with only BPD symptoms, may explain the findings in contrast to the findings of the study of Chapter 2.

Furthermore, the BPD domain affective instability was associated with impaired work performance in this study, even when controlling for severity of depression. Affective disturbances are very common and a core part of the psychopathology of patients with BPD. It would therefore be worthwhile to test for potential mediation between depressive and BPD symptoms. Unfortunately, we were unable to test for mediation due to the cross-sectional nature of the data. It could be that BPD patients with current depressive or anxiety symptoms are less motivated to go to work or apply for a job. It may also be more difficult to focus and perform tasks.

Yet, the comorbid group with both BPD symptoms and depressive and anxiety disorders contributed extensively to both absenteeism and impaired work performance compared to workers without psychopathology. Consistent with the literature, our study showed that impairment was highest in those suffering from co-occurrence of disorders or symptoms (31,32). Furthermore, a recent large population-based cohort study showed that of all types of comorbidity, the comorbidity between PDs and affective disorders was among the highest (253). The studies described above make a strong case for the relationship between occupational dysfunction and BPD symptomatology. However, poor occupational functioning is not unique to BPD and is common in other mental health disorders such as depression

and psychotic disorders. The overall high comorbidity between BPD and affective disorders (26,45,254) might suggest that poor occupational functioning is not specific to a diagnosis but could be partly due to shared underlying characteristics (8), such as negative affect.

Occupational functioning in borderline personality disorder
In Chapters 4 & 5 we examined occupational functioning in patients with BPD. The findings of our qualitative study in Chapter 4 suggested that low self-esteem and a fear about how others might perceive them induced stress and resulted in problems at work, mainly expressed as problems with interpersonal relationships. In Chapter 5 we examined vocational (employment and education) functioning longitudinally in adolescent patients with BPD (aged 15 – 25). Confirming to some extent our findings of Chapter 4, we found that vocational disengagement was predicted by not achieving age-appropriate educational milestones, and greater instability in the BPD domains interpersonal relationships and identity. This fits with the notion that the BPD domains identity and interpersonal relationships are associated with impaired psychosocial functioning (of which, amongst others, employment and educational functioning are part) (226,227). Interestingly, in Chapter 5, the abovementioned BPD domains rather than BPD severity or diagnosis predicted vocational dysfunction in adolescent BPD patients, suggesting that next to these BPD domains other unidentified factors play a role in vocational functioning.

Furthermore, because BPD typically has an early onset in the period between puberty and emerging adulthood, it is likely that normative developmental processes such as receiving education

and developing occupational goals are hindered by psycho-pathology or the process of seeking help. We contributed to existing literature in adults (5,125), by demonstrating that even in youth with BPD vocational functioning did not improve during treatment. Rather, vocational functioning was highly variable, demonstrated by the frequent changes of vocational engagement and disengagement in young people with BPD. The findings of our studies in patient samples confirm that interventions aiming to improve occupational functioning in patients with BPD need to happen as early as possible in the course of the disorder, with missing educational milestone as a signal, and target the BPD domains of interpersonal relationships and identity (226,227). Another argument for early intervention is that impaired vocational functioning from adolescence onwards is likely damaging future prospects and functioning (208,227).

Psychosocial factors and occupational functioning in BPD
Occupational functioning in BPD is determined by more factors than BPD diagnosis or symptoms, demonstrated by our, and previous, findings that symptom reduction in successful treatment does not automatically translate into better occupational functioning. This is furthermore confirmed in the extensive literature showing that both work-, and non-work related factors contribute to psychosocial factors and coping with problems at work. Therefore, to address work disability an 'integrated multifactorial approach' is needed (255–258). Rather than separating work situations from health conditions, both constructs should be viewed as a continuum when studying occupational functioning (256,259). Our Chapter 2 study demonstrated that BPD symptoms in workers were associated with working conditions,

which shows the interconnectedness of BPD symptoms, working conditions and occupational functioning. The worker, the group of colleagues, the organization should be viewed as intertwined "actors", all playing an active role in determining the quality of working conditions and associated health conditions (256). Thus, the psychosocial work environment represents a set of potential factors associated with how and why workers interact between co-workers, the demand of their job and the work environment. Furthermore, external workload, organizational factors, and the social context are potentially mediating factors (260,261). It is perceivable that in individuals with BPD (symptoms) interaction within the social context is especially stressful and difficult. Our Chapter 5 findings, demonstrating that the BPD domains inter-personal functioning and identity were associated with impaired vocational functioning, point in this direction. Therefore, in order to fully understand occupational dysfunction, the elements of the person-environment interaction as well as the influences of systems on the worker should be examined (260).

Heterogeneity in PDs and its relation to impaired functioning
Furthermore, BPD is a very heterogeneous disorder and indi-viduals with BPD show significant between-person variability in within-person trajectories of BPD symptoms over time (227). Heterogeneity and variability in persons is found in other mental disorders (262). In response, psychiatric research and the DSM are moving away from categorical diagnoses to a dimensional descriptive system. Furthermore, the importance of assessing impairment in PDs has been acknowledged in the latest DSM-5, posing a new model for diagnosing PDs. The Alternative Mod-el for Personality Disorders (AMPD) provides a framework to

diagnose PDs based on a dimensional model as opposed to a categorical conceptualization of PDs. In the AMPD, PD diagnoses are based on two criteria: a) an assessment of the level of impairment specifically in the domains of self (identity or self-direction) and interpersonal (empathy or intimacy) functioning, and 2) an evaluation of pathological personality traits (Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism) (9). Disturbances in self and interpersonal functioning constitute the core of personality psychopathology (263). Accordingly, our studies in BPD patients found these two domains to be predictors of occupational dysfunction. Recently, it was found that the ratings of impairment in the new AMPD traits model added predictive validity to the original categorical approach of assessing PDs (264). This confirms that PD traits are inextricably connected to impaired functioning.

OCCUPATIONAL HEALTH
Practical guidelines and support for occupational health professionals
There has been an obvious momentum for the subject employment in PDs during this project, evidenced by the multiple invitations for providing talks at conferences and supplementary trainings for occupational health professionals we received. During these conferences or trainings, particularly occupational health professionals emphasized the lack of practical guidelines to support individuals with PDs. Similarly, as also found in our qualitative study, occupational health professionals expressed having poor understanding of treatment perspectives in BPD or in PDs in general. This poor understanding made it difficult to align support to employment with treatment.

Stigma

In Chapter 4, our qualitative study, mental health practitioners and insurance physicians had little confidence in individuals with BPD pathology gaining sustainable employment based on previous experiences. Also, insurance physicians described to be on the defensive, to set clear boundaries and to be very self-aware when meeting with individuals with BPD psychopathology. As previously demonstrated in mental health professionals (64), it may be that occupational health professionals perceive individuals with BPD as difficult. To enhance effective support to individuals with PD psychopathology, occupational health professionals should be well educated and facilitated by means of supplementary training, access to inter- and supervision, and sufficient support by other disciplines and managers. Also, closer collaboration between mental health and occupational health would improve knowledge, adequate support and alignment between treatment and support to employment specifically in relation to (B)PD psychopathology. Despite that, in general, establishing a constructive working relationship with an individual with (B)PD may be difficult and not all individuals with (B)PD may find sustainable employment, improving knowledge about (B)PD and sharing experiences with successful (return to) work trajectories may be the first steps towards diminishing stigma.

THE WORKPLACE

Stigma

In Chapter 4, we showed that both mental health and occupational health professionals had little confidence in sustainable employability of patients with BPD. This may likely also play a role

at the workplace. In relation to employment and mental health, three types of stigma are distinguished in literature: i) fear of disclosure by the patient, ii) negative attitude of employers, and iii) anticipated stigma (183). Further, it is argued that i) employers and managers hold negative attitudes towards people with mental illness or mental health issues, which decreases chances of getting hired or supported, ii) both disclosure and non-disclosure of mental health can lead to job loss, iii) anticipated discrimination, self-stigma and the "why-try" effect can lead to insufficient motivation and effort to keep or find employment and can result in unemployment, iv) stigma is a barrier to seeking healthcare, which can lead to untreated and worsened health conditions and subsequently occupational outcomes (e.g. sick leave, work loss) (76). Our qualitative study confirmed anticipated stigma, the "why-try" effect, and job loss due to disclosure and non-disclosure among BPD patients. Furthermore, given the severe public stigma in relation to BPD it is likely that stigma in relation to employment in workers with BPD symptoms is highly prevalent (127).

Working conditions
As previously mentioned, not all occupational dysfunction is completely relatable to mental health. Adverse working conditions at the job are associated with decreased mental health (48,75). In Chapter 2, we showed that BPD symptoms were associated with lower decision latitude, lower job security, and lower perceived co-worker support. In turn, regardless of BPD symptoms, the working conditions were by itself associated with work loss days. It is therefore important that employers and executives are aware of the working climate and definitions of work ability (265).

Potential area for (preventive) intervention and mental health policy

In Chapter 3, we showed that BPD symptoms predominantly impeded work performance while at work, and to a lesser extend absenteeism from work. This suggests that the workplace is an important area for strategies to prevent impaired work performance, and also to prevent consequential (long-term) absenteeism or work loss from impaired work performance. Therefore, improving collaboration between mental health, occupational health and the workplace is needed to intervene timely and learn from each other's expertise. However, employers and companies are no true partners for the mental health care system, and the mental health care system has taken little responsibility for the employment outcomes of their patients (1). Our findings stress the need to coordinate current interventions in a better way, making the workplace another key target area for intervention and mental health policy.

Individual Placement and Support

Individual Placement and Support is a method of supported employment emphasizing the integration of mental health care and the workplace. Typically, IPS practitioners build employment networks and relationships through systematic contacts, and provide ongoing support to both patients and the workplace while being part of the mental health treatment team. In Chapters 6 & 7, we studied if occupational outcomes differed between IPS participants with PDs and other mental disorders. No differences between diagnostic groups on the different employment outcomes were found, suggesting that IPS could be effective in PDs. Ideally, we would have examined IPS in PDs by means of

a randomized controlled trial in the treatment regimen for PDs. Unfortunately, due to financial constraints (related to the financing structure of IPS in the Netherlands) this was not possible at the time. We therefore aimed to get as close as possible to studying effectiveness of IPS in PDs. It should however be noted that we were unable to examine IPS within the treatment regimen for patients with PDs.

It is conceivable that in the treatment regimen for PDs, a predominant psychotherapeutic environment, allowing time for direct availability to employment is less than in assertive community treatment. Also, IPS workers supporting those with PD symptomatology might profit from additional training with respect to maintaining effective working relationships and dealing with the accompanying countertransference feelings in working with patients with PDs. Typically, support from IPS is long-lasting and therefore allows for establishing a working relationship that supports sustainable employment in individuals with PDs and BPD symptoms. Our findings suggest IPS effectiveness in PDs. Fortunately, a randomized controlled trial examining IPS effectiveness in young people with BPD is currently being conducted (228). A future randomized controlled trial examining IPS in adults with BPD compared to traditional vocational rehabilitation is needed to consolidate our preliminary results. If IPS effectiveness is confirmed in a randomized controlled trial, future studies could examine (standard) IPS with augmented IPS (aimed at establishing longitudinal relationships and targeting specific (B)PD domains) to provide more insight into the specific areas that need attention in this group and at the workplace.

METHODOLOGICAL CONSIDERATIONS

A major strength of this dissertation is the combination of epide-
miological, qualitative, and semi-experimental studies in assessing
occupational functioning in (B)PD patients and individuals with
BPD symptoms. The epidemiological studies confirmed that oc-
cupational functioning is impaired both in clinical samples of BPD
patients, and in those with BPD symptoms from the general popu-
lation. Qualitatively examining barriers and facilitators to employ-
ment in BPD from different perspectives provided further insight
into the factors in BPD that explain occupational dysfunction, and
inform strategies aimed at improving occupational functioning.
Both semi-experimental studies exploring effectiveness of IPS in
PDs suggested that IPS is an effective method of supported em-
ployment among participants with PDs, encouraging the useful-
ness of this method for implementation within treatment for PDs.

However, as with all studies the results must be interpreted
with the following methodological considerations in mind. First,
Chapters 2 & 3 measured BPD symptoms and occupational func-
tioning based on a non-clinical interview or self-report. Self-re-
port measures are sensitive to personal evaluation and might have
therefore biased the results. This could have led to social desirable
answers but also, as is common in individuals with affective dis-
orders, a tendency of evaluating the environment and subjective
experiences more negatively due to psychopathology. Also, using
different measures to assess both clinical an occupational out-
comes diminish the generalizability of our findings. Furthermore,
Chapters 2 & 3 were cross-sectional studies, meaning that the
data were measured at one time point, making it more susceptible
to bias as compared to studies with multiple assessments.

Second, the variety in measurements of BPD symptomatolo-

gy, occupational functioning, methods and samples (e.g. general population, depression & anxiety patients, adult and youth BPD patients), makes it difficult to compare and generalize the results of our studies. Also, the secondary analyses examining IPS effectiveness in PDs were semi-experimental designs. More longitudinal studies and experimental designs are needed to assess long-term consequences of (B)PD symptomatology, psychosocial work environment on occupational functioning, and study interventions targeting the improvement of occupational functioning in PDs.

Third, occupational functioning is not only related to psychopathology. There are more work-related and environmental aspects at play. In Chapter 2, we included four working conditions. There are however other working conditions, such as number of working hours, cultural atmosphere, distance from home to work, career development and perspectives that may be important contributors to occupational impairment. Also, on the societal level, factors such as disability policies, labour market, and economic prosperity play a role in relation to occupational functioning (265).

CLINICAL IMPLICATIONS

Employment as part of mental health treatment
A relevant next step for the clinic is to integrate occupational functioning within the mental health treatment of PD because our studies showed that occupational functioning and personality pathology are inextricably connected. Therefore, targeting employment outcomes should be an essential part of recovery in mental health treatment in PDs. However, within the treatment

regimen for patients with a PD, there is a strong emphasis on clinical improvement. These individuals, that by definition have difficulty in interpersonal functioning, should be consciously encouraged to include goals aimed at improving occupational functioning as part of their treatment (plan).

Furthermore, the early onset of BPD urges the need to intervene early also in terms of occupational functioning. Because young people with BPD (symptoms) are likely first encountered within mental health treatment, this is the place to offer additional interventions aimed at improving vocational (employment and education) functioning. Once an individual claims a disability benefit, signs of dysfunction have often preceded and ideally preventive measures should have been taken earlier (1).

Building bridges between mental and occupational health

Important to consider is that much has been improved in relation to occupational functioning and mental health in general since the start of this PhD project. This growing awareness and improvement of addressing mental health in the workplace may in turn be beneficial for improving occupational functioning in PDs. Still, occupational health professionals expressed difficulties in supporting individuals with (B)PD symptomatology. Yet, an important role for prevention of deterioration of occupational functioning in (B)PD symptomatology lies with occupational health professionals. Occupational health professionals could be important partners signalling early and bridging between mental health and the workplace.

Since Chapter 2 showed that BPD symptoms in workers from the general population (most likely not in treatment) contributed extensively to occupational dysfunction, this calls for a signalling

and preventive role for occupational health professionals to inter-
vene timely and prevent (long-term) absenteeism. Furthermore,
occupational health professionals could contribute to the inte-
gration of (mental) health and the workplace by making employ-
ers, supervisors and co-workers more aware of mental health in
the workplace. Furthermore, in collaborating closer with mental
health professionals in relation to (B)PD, occupational health
professionals may gain a better understanding of the specific (B)
PD vulnerabilities in relation to employment.

A specific guideline to support sick-listed workers with PDs or
BPD symptoms might provide more adequate support. For ex-
ample, an integrated psychiatric consultation how to support pa-
tients provided to occupational health professionals for sick-list-
ed workers with mental health issues resulted in a much faster
return to work (70 days earlier as compared to control group)
(266). Psychiatric consultation in how to support those with PDs
might be particularly beneficial, however working with individuals
with (B)PD psychopathology remains customized work.

**Extending the bridge: between mental health, occupational
health and the workplace**
The workplace itself is also an important potential place of
prevention. Managers and supervisors should be supported to
improve mental health literacy among employees. Furthermore,
mental health professionals and occupational health profession-
als could support individuals in the choices relating to disclosure
of vulnerabilities or symptoms. However, future studies should
further explore if and how to disclose, as a recent study showed
that perspectives among occupational health professionals and
HR managers in the workplace diverged between if and when to

disclose (267). Collaboratively making a plan, if needed with the workplace, to anticipate timely on certain symptoms would automatically include the workplace and improve mental health literacy. As mentioned before, the attention for improving occupational functioning in individuals with mental health vulnerabilities is growing. However, the rehabilitation literature predominantly focussed on individuals with other mental disorders. Studies argue that BPD is among the mental disorders that result in the highest societal costs. Yet, evidence-based support to improve occupational functioning in this group remains lacking and is a much needed avenue.

RECOMMENDATIONS

MENTAL HEALTH
• Incorporate occupational functioning in treatment plan
• Examine interpersonal relationships and identity
• Examine IPS

OCCUPATIONAL HEALTH
• Educate occupational health professionals
• Develop guidelines
• Develop preventive and signalling strategies

THE WORKPLACE
• Increase mental health literacy

RECOMMENDED FUTURE DIRECTIONS

An interesting question that remains unanswered so far, is how working with a co-worker with BPD is perceived. Given the difficulty of interpersonal functioning and impulsivity characterizing BPD, it is perceivable that working with a person with BPD may be difficult. Qualitative methods, and particularly participatory research methods, could be informative to study interaction in the social context at work among workers with BPD symptoms and the psychosocial work environment. Therefore, in order to fully understand occupational dysfunction, the elements of the person-environment interaction as well as the influences of systems on the worker should be examined, including workers with BPD symptomatology, co-workers, supervisors and employers. As mentioned throughout this discussion, improving collaboration between mental health, occupational health and the workplace specifically in relation to personality psychopathology needs to be enhanced. Participatory research methods within intervention studies could contribute extensively to answering the questions in relation to functioning and the psychosocial work environment in workers with (B)PD, and will also contribute to improving mental health literacy at the workplace.

Another important topic for further investigation is studying stigma in relation to occupational functioning in (B)PD among mental health professionals, occupational health professionals, and at the workplace. In individuals with mental health vulnerabilities, stigma in relation to employment is an important contributing factor to unemployment and a complex problem (27). Furthermore, stigma in (B)PD is severe and was present among both mental health professionals and occupational health professionals in relation to employment in our study. Therefore,

further examining the extent to which stigma (e.g. the 'why-try' effect, anticipated stigma, self-stigma, stigma among co-workers, managers) impedes gaining and maintaining employment in BPD (symptoms) is essential. Furthermore, in order to diminish stigma, it is important to enhance knowledge about (B)PD among workers, but especially among managers to contribute to the establishment of an environment that is supportive of mental health issues, and supports employers and managers in enhancing this knowledge (20). Future research is warranted to examine these questions and provide interventions that diminish stigma and enhance knowledge among occupational health professionals, and the workplace.

As discussed, occupational functioning in (B)PD psychopathology is complex, and marked by a variety of factors (e.g. (B)PD symptoms, comorbidity, working conditions, psychosocial work-environment, occupational health, societal factors). Future studies examining occupational functioning in personality psychopathology should thus include multiple factors and study potentially shared underlying characteristics of co-occurring other mental disorder symptoms, preferably within longitudinal representative samples. In particular, a needed future study could be a randomized controlled trial examining effectiveness of IPS compared to traditional vocational rehabilitation. Based on our findings, future studies should target the PD domains interpersonal functioning and identity in relation to work, and support IPS workers in establishing a constructive longitudinal working relationship with participants with PDs.

CONCLUSIONS

In this thesis, the first aim was to examine associations of BPD and BPD symptoms with occupational functioning in different patient samples and among workers of the general population. Also, we examined the longitudinal relationship and underlying explanatory characteristics of occupational dysfunction in BPD. In relation to the second aim, we studied whether Individual Placement and Support could be an effective method of supported employment in patients with PDs. Overall, we demonstrated that BPD symptoms among workers from the general population and different patient samples are both prevalent, and contribute extensively to occupational dysfunction. We showed that the association between BPD (symptoms) and occupational dysfunction was partly explained by i) characteristics of BPD (e.g. within the domains of interpersonal functioning and identity), ii) comorbidity with other mental disorders, such as depressive and anxiety disorders, and shared underlying characteristics (e.g. affective instability), iii) stigma, and iv) lack of collaboration between men-

tal health, occupational health and the workplace. Other factors, such as the psychosocial work environment and societal factors likely also contribute to occupational dysfunction. Furthermore, our findings showed that providing adequate mental health treatment in BPD does not automatically translate into improved occupational outcomes, emphasizing the need to develop occupationally targeted interventions.

Our findings suggest that Individual Placement and Support might be an effective method of supported employment in PDs. After establishing IPS effectiveness in PDs, a next step would be to examine if augmented IPS is effective over and above standard IPS within the treatment regimen for PDs. Specifically, we found that factors such as interpersonal functioning and identity disturbance contributed to vocational disengagement among young people with BPD, and from the perspectives of professionals interpersonal functioning was suggested as a specific target to improve in relation to employment. Focussing on interpersonal functioning and identity as augmentations to a standard IPS program may improve occupational outcomes. Also, research efforts should be undertaken to examine all factors contributing to occupational dysfunction (e.g. stigma, working conditions, person-environment) for example by means of qualitative methods in intervention studies. Hopefully, this will further elucidate the factors that impact on occupational dysfunction in (B)PD symptomatology, which will inform specific interventions and ultimately diminish the great burden of those with (B)PD symptomatology in the workplace as well as the social and economic consequences of occupational dysfunction.

Dutch summary |

Nederlandse samenvatting

Werk functioneren bij
persoonlijkheidsstoornissen:
een kwantitatieve, kwalitatieve en
semi-experimentele benadering

INTRODUCTIE

De aanleiding voor dit proefschrift was het gebrek aan kennis over werk functioneren bij mensen met persoonlijkheidsstoornissen (PS). Dat er een associatie bestond tussen PS en verminderd werk functioneren, een uitkering ontvangen en verhoogde kans op werkeloosheid was duidelijk. Maar wat er mis ging op het werk of waarom mensen vaker geen baan hadden bleef onduidelijk op basis van bestaande wetenschappelijke literatuur. De meeste literatuur liet zien dat mensen met een borderline persoonlijkheidsstoornis (BPS) vaker werkeloos waren en een uitkering ontvingen. Studies die naar de kosten van psychiatrische aandoeningen keken, vergeleken de kosten door productieverlies bij BPS met dat van psychotische stoornissen, vaak bestempeld als de meest ernstige psychiatrische aandoening in relatie tot (werk) functioneren.

Daarnaast was de initiële opzet van deze studie het onderzoeken van een bewezen effectieve methode ter ondersteuning van het vinden en behouden van regulier betaald werk bij mensen met psychiatrische aandoeningen, Individual Placement and Support (of Individuele Plaatsing en Steun) (IPS), binnen de behandeling voor mensen met persoonlijkheidsproblematiek. Echter, IPS kent in Nederland nog altijd geen structurele financiering en dit veroorzaakte dat er onvoldoende gefinancierde IPS trajecten beschikbaar kwamen om een degelijke randomized controlled trial (RCT) uit te voeren. We hebben vervolgens geprobeerd zo dicht mogelijk bij de werkelijkheid te komen middels analyses van samples waarbij we participanten in een IPS traject op basis van diagnose vergeleken (persoonlijkheidsstoornissen versus andere psychiatrische aandoeningen). Daartoe waren de doelen van dit proefschrift:

1)   Het bestuderen van de relatie tussen werk functioneren en BPS (symptomen), zowel in de algemene bevolking als in de patiëntpopulatie, door gebruik van kwantitatieve methoden in grote cohorten en kwalitatieve methoden in geselecteerde patiënten samples.

2)   Het bestuderen van in hoeverre IPS een effectieve methode is ter ondersteuning van het vinden en behouden van een baan bij mensen met een PS in vergelijking tot mensen met een andere psychiatrische aandoening.

SAMENVATTING VAN DE HOOFDBEVINDINGEN

De eerste hoofdstukken van dit proefschrift beschrijven de onderzoeken over werk functioneren bij mensen met BPS (symptomen). In hoofdstuk 2 onderzochten we de associatie tussen BPS symptomen onder werkenden in de Nederlandse bevolking met werk functioneren en aantal werk verlies dagen. BPS symptomen waren consistent geassocieerd met werk verlies dagen. Zelfs als we controleerden voor andere veelvoorkomende psychiatrische aandoeningen (zoals depressieve, angst en middelenmisbruik stoornissen). Tevens waren BPS symptomen geassocieerd met een verminderde ervaren beslisbevoegdheid, verminderde ervaren baanzekerheid en lagere steun van collega's op het werk. BPS symptomen waren niet geassocieerd met psychologische baanvereisten, oftewel stress door werk. Dit was onverwacht, omdat bij mensen met BPS doorgaans een hoger stressniveau (in ruststand) ten opzichte van gezonde controles wordt gevonden. Mogelijk is dit te verklaren doordat wij hebben gekeken naar symptomen van, en niet de stoornis BPS. De bevindingen van deze studie wijzen er op dat BPS symptomen vaak voor komen onder de algemene bevolking en geassocieerd zijn met vermin-

derd werk functioneren in de vorm van werk verlies dagen, onge-
acht type of aantal nadelige werk condities en veelvoorkomende
andere psychiatrische aandoeningen.

In hoofdstuk 3 hebben we gekeken naar de associatie van BPS
symptomen in patiënten met en zonder depressieve en angst-
stoornissen in de vorm van verminderd werk functioneren tijdens
het werk en werk verlies dagen. Uit deze studie bleek dat zowel
depressieve en angststoornissen en BPS symptomen belangrijke
factoren zijn die bijdragen aan verminderd werk functioneren op
het werk en werk verlies dagen. Opvallend was dat de associatie
tussen BPS symptomen en langdurige afwezigheid (> 2 weken) en
verminderd werk functioneren verdween na het toevoegen van
ernst van depressieve symptomen aan het model. In tegenstelling
tot de studie in hoofdstuk 2, suggereert deze studie juist dat het
effect van BPS symptomen op werk verlies dagen en verminderd
werk functioneren zou kunnen lopen via de depressieve en/
of angst symptomen binnen BPS. Tegelijkertijd moet benadrukt
worden dat deze studie was gebaseerd op een cohort met als
doel angst en depressie te bestuderen en er mogelijk onder-clas-
sificatie van BPS speelt, omdat deze groep niet tot de doelpopu-
latie behoorde.

Om dichter bij factoren die een rol spelen in werk functione-
ren in BPS te komen, hebben we middels een kwalitatieve studie
onderzocht wat de belemmerende en bevorderende factoren
van BPS zijn in het vinden en behouden van een baan volgens
patiënten met BPS, GGZ professionals en verzekeringsartsen.
Zowel belemmerende als (gesuggereerde) bevorderende facto-
ren werden gerelateerd aan drie thema's: 1) kenmerken van BPS,
2) stigma en 3) ondersteuning richting werk. Kenmerken van BPS
die het vinden en behouden van werk in de weg stonden waren:

het hebben van een laag zelfbeeld, moeite met het aangeven van grenzen, moeite met het reguleren van emoties en ontbreken van structuur. De beide professionals groepen voegden hieraan toe, de neiging van BPS patiënten tot externaliseren en zichzelf overschatten. Volgens alle betrokkenen was het noodzakelijk dat emotie regulatie en zelf reflectie verbeterd werden. Stigma werd door alle deelnemers herkend en ernstig geacht in relatie tot BPS en werk functioneren. Patiënten deelden ervaringen waarin ze hun baan kwijt raakten na het geven van openheid en het meren-deel van de patiënten was er van overtuigd dat openheid niet ten goede zou komen aan de kansen op een baan. Opvallend was dat beide professionalsgroepen zich tijdens het focus groep in-terview realiseerden dat zij zelf weinig vertrouwen hadden in het duurzaam behouden van een baan bij mensen met BPS. Volgens alle drie de groepen moeten de GGZ en rehabilitatie diensten investeren in meer samenwerken. Dit is bovendien nodig om kennis over BPS en duurzame inzetbaarheid in werk te vergroten en het stigma op BPS te verminderen.

BPS ontstaat vaak in de pubertijd of adolescentie, wat per definitie ook de leeftijd is waarin men educatieve en loopbaan doelen ontwikkeld, daarom richten we ons in hoofdstuk 5 op jongeren tussen de 15 en 25 jaar in behandeling voor BPS. We onderzochten in deze studie welke factoren niet aan het werk of in opleiding zijn (NEET (Not in Employment, Education or Trai-ning) voorspellen bij jongeren met BPS. Bij aanvang van de studie waren een oudere leeftijd (>18 jaar), niet behalen van leeftijdge-bonden verwacht opleidingsniveau en middelen misbruik geasso-cieerd met NEET status. NEET status veranderde bovendien sterk gedurende 18 maanden behandeling. Daarom construeerden we drie groepen: een groep die vanaf de start van de studie tot 18

maanden later studeerde of aan het werk was of gaandeweg aan het werk kwam of ging studeren (niet-NEET), een groep die niet studeerde of werkte vanaf de start van de studie tot 18 maanden later of die werk of studie verloren (NEET) en een groep die vaker dan 2 keer wisselde in wel en niet studeren/werken (Onstabiele NEET). Niet behalen van leeftijdgebonden verwacht opleidingsniveau en het hebben van onstabiele interpersoonlijke relaties, onstabiele identiteit (sense of self) voorspelde NEET of Onstabiele NEET status. Bovendien verbeterde participatie in werken/studeren niet gedurende 18 maanden. Het aantal mensen dat niet werkte/studeerde was vrijwel gelijk aan het begin en eind van de studie (39.3% versus 39.5%). Op basis van de bevindingen van deze studie lijkt het raadzaam zo vroeg mogelijk in te zetten op het verbeteren van participatie in onderwijs en werk bij jongeren met BPS. Een belangrijk signaal is het niet behalen van het normatieve opleidingsniveau op basis van iemands leeftijd en factoren die een belangrijke rol lijkten te spelen in verminderd functioneren zijn interpersoonlijke relaties en identiteit.

De laatste twee hoofdstukken van dit proefschrift bestudeerden het effect van IPS in patiënten met een PS ten opzichte van patiënten met een andere psychiatrische aandoening. In hoofdstuk 6 gebruiken we data van de eerste RCT in Nederland die het effect van IPS onderzoekt. In de SCION studie participeerden 31 deelnemers met een PS diagnose en 115 deelnemers hadden een andere psychiatrische aandoening. Eerst bestudeerden we of het effect van IPS (interventie versus controle) anders was tussen beide diagnose groepen (PS versus andere psychiatrische aandoeningen). Het effect van IPS bleek niet significant anders voor de ene groep dan voor de andere groep. Vervolgens hebben we binnen de IPS conditie gekeken of er verschillen waren in de tijd tot het

vinden van een baan tussen beide groepen. Opnieuw vonden we geen verschil tussen de diagnostische groepen. Op basis van deze bevindingen lijkt het effect van IPS dus niet verschillend voor deelnemers met PS ten opzichte van deelnemers met andere psychiatrische aandoeningen. Echter, hierbij moet worden opgemerkt dat de studie te lage aantallen in met name de PS groep had ten opzichte van de andere groep om onze vraag echt te toetsen. Daarom hebben we in hoofdstuk 7 dezelfde vraag nogmaals onderzocht in een groot cohort, waarin data over deelname aan IPS van het UWV werd gekoppeld aan corresponderende data van de deelnemers over werk uitkomsten, diagnostiek en demografische gegevens van het CBS. In dit cohort bestaande uit 1,408 deelnemers, waren 335 deelnemers gediagnosticeerd met een PS en 1,073 met een andere psychiatrische aandoening. We vonden geen verschillen tussen het aantal deelnemers met een PS ten opzichte van het aantal deelnemers met een andere psychiatrische aandoening dat een baan vond in IPS. Ook de tijd tot het vinden van een baan in IPS was niet significant verschillend tussen beide groepen. Evenals het aantal uren aan het werk. Deze studie bevestigd de bevindingen uit de studie van hoofdstuk 6 en suggereert dat IPS een effectieve methode voor ondersteuning in het vinden van werk bij mensen met een PS zou kunnen zijn. Of IPS de meest effectieve methode is voor deze groep en of IPS past binnen de behandeling voor mensen met PS moet verder onderzoek uitwijzen. Aangezien uit onze andere studies naar voren komt dat verminderd werk functioneren kan lopen via affectieve symptomen, identiteit en interpersoonlijke relaties zou het kunnen zijn dat aandacht voor deze gebieden in IPS specifiek bij PS betere resultaten oplevert dan een standaard IPS traject.

AANBEVELINGEN VOOR DE PRAKTIJK

Werk als onderdeel van de GGZ behandeling

Er was een duidelijk momentum voor de urgentie van dit onderwerp gedurende dit promotietraject, bewezen door de hoeveelheid uitnodigingen voor praatjes en trainingen en interesse ontvangen vanuit de hoek van bedrijfs- en verzekeringsgeneeskunde. Vooral binnen de bedrijfs- en verzekeringsgeneeskunde bleek een grote vraag naar handvatten om mensen met een PS te begeleiden.

Een relevante vervolgstap voor de klinische praktijk zou het integreren van werk als onderdeel van de GGZ behandeling zijn, omdat onze studies de onlosmakelijke verbondenheid tussen werk functioneren en persoonlijkheidspathologie aantonen. Daarom zou het stellen van doelen met betrekking tot werk functioneren een essentieel deel van het herstel van mensen in behandeling voor een PS moeten zijn. Vooralsnog ligt er echter binnen de behandeling voor mensen met PS voornamelijk de nadruk op klinisch herstel. Patiënten die per definitie moeite hebben met interpersoonlijk functioneren, zouden daarom actief moeten worden uitgenodigd om doelen te stellen ten behoeve van het verbeteren van werk functioneren als onderdeel van hun GGZ behandelplan.

Ook het op jonge leeftijd optreden van BPS benadrukt het belang van tijdige interventie met betrekking tot participatie, zoals werk functioneren. Waarschijnlijk worden deze jongeren allereerst geïdentificeerd binnen de GGZ, daarom is het van belang binnen deze behandelingen interventies aan te bieden die er op gericht zijn functioneren in werk en opleiding te monitoren en indien nodig te verbeteren. Mede omdat preventie beter is dan genezen.

Bruggen bouwen tussen de GGZ en bedrijfs- en verzekerings-geneeskunde

Het is belangrijk om te benadrukken dat er al veel is gebeurd in het verbeteren van werk functioneren bij mensen met psychiatrische aandoeningen en dat ook de GGZ en bedrijfs- en verzekeringsgeneeskunde erkennen dat samenwerking noodzakelijk is (GGZ – UWV Convenant 2018). Deze groeiende bewustwording en verbetering van aandacht voor mentale gezondheid op het werk zijn ook bevorderend voor het verbeteren van werk functioneren bij PS. Toch bleek dat verzekeringsartsen moeite hadden met het begeleiden van cliënten met (B)PS. Tegelijkertijd ligt er juist bij bedrijfs- en verzekeringsartsen een belangrijke rol in het verbeteren van werk functioneren bij mensen met PS. Zij zijn de professionals die bij uitstek, vooral bij mensen die nog aan het werk zijn, tijdig kunnen signaleren en de brug kunnen vormen tussen de GGZ en de werkplek. Mede omdat bleek dat een aanzienlijk deel van de werkenden met BPS symptomen verminderd functioneren. Ook kunnen met name bedrijfsartsen een belangrijke rol vervullen in het integreren van (mentale) gezondheid op de werkvloer door werkgevers, leidinggevenden en medewerkers bewust te maken van mentale gezondheid op het werk. Tegelijkertijd, door meer samen te werken met de GGZ kunnen zij hun begrip van psychiatrische aandoeningen, in dit geval specifiek (B)PS verbeteren en de kwetsbaarheden ten aanzien van dergelijke symptomen beter begrijpen in relatie tot werk functioneren.

Verlengen van de brug tussen GGZ, bedrijfs- en verzekerings-geneeskunde en de werkplek

De werkplek is een belangrijke plek voor preventie. Managers en leidinggevenden moeten ondersteund worden om de kennis van mentale gezondheid op de werkplek te vergroten. GGZ en bedrijfsartsen kunnen werkenden helpen in het maken van keuzes in relatie tot het geven van openheid en indien nodig, samen met de werkplek, een plan maken ten behoeve van arbeidsomstandigheden, duurzame inzetbaarheid en mentale gezondheid van de werknemer.

AANBEVELINGEN

GEESTELIJKE GEZONDHEIDSZORG
• Integreren van werk functioneren als onderdeel van het behandelplan
• Onderzoeken van interpersoonlijk functioneren en identiteit
• Onderzoeken van IPS

VERZEKERINGS- EN BEDRIJFSGENEESKUNDE
• Ontwikkelen van preventieve en signalerende strategieën

DE WERKPLEK
• Verbeteren van kennis over geestelijke gezondheid

TOEKOMSTIG ONDERZOEK

Een belangrijke niet onderzochte vraag is hoe bovenstaande con-
clusies in de praktijk zouden uitwerken. Kwalitatieve onderzoeks-
methoden, en in het bijzonder participatieve onderzoeksmetho-
den, in interventiestudies kunnen bijdragen in het beantwoorden
van vragen in relatie tot functioneren en de psychosociale werk-
omgeving van werkers met (B)PS, en zullen tegelijkertijd bijdragen
aan kennis over mentale gezondheid op de werkvloer.

Een ander belangrijk onderdeel dat naar voren kwam in onze
studie en andere studies naar werk functioneren bij mensen met
psychische problemen is stigma. Stigma is een belangrijke factor
voor werkeloosheid en een complex probleem. Er heerst bij uit-
stek een groot stigma op (B)PS en ook verschillende studies laten
zien hoe sterk GGZ professionals bevooroordeeld zijn over het
vermogen van mensen met (B)PS om te herstellen. Het is daarom
van belang om het stigma over mensen met (B)PS te verminderen
en te onderzoeken als belemmerende factor in relatie tot werk.

TOEKOMSTIG ONDERZOEK
Bruggen bouwen tussen GGZ,
arbozorg en de werkplek

TOEKOMSTIGE STUDIES:
• Onderzoeken van psychosociale factoren
• Onderzoeken van stigma
• Meerdere factoren includeren
• Vergelijken van standaard IPS met specifiek aangepaste IPS

CONCLUSIES

In onze studies bleek dat BPS symptomen bij werkenden in de algemene bevolking en verschillende patiënt populaties veel voorkomen en bijdragen aan verminderd werk functioneren. We toonden aan dat de associatie tussen BPS (symptomen) en verminderd werk functioneren deels wordt verklaard door i) de kenmerken van BPS (bijvoorbeeld door de BPS domeinen interpersoonlijk functioneren en identiteit), ii) comorbiditeit met andere psychiatrische aandoeningen, zoals depressieve en angststoornissen, en gedeelde onderlinge kenmerken (zoals affectieve instabiliteit), iii) stigma en iv) gebrek aan samenwerking tussen GGZ, bedrijfs- en verzekeringsgeneeskunde en de werk-plek. Andere factoren, zoals de psychosociale werkomgeving en maatschappelijke factoren dragen ook bij aan verminderd werk functioneren. Ook bevestigen onze bevindingen dat adequate GGZ behandeling niet automatisch vertaald wordt naar verbe-terde werk uitkomsten, ook niet bij jongeren, wat benadrukt dat specifieke (vroeg)interventies gericht op het verbeteren van werk functioneren moeten worden ontwikkeld.

Onze bevindingen suggereren dat Individuele Plaatsing en Steun een effectieve methode zou kunnen zijn om mensen met PS te ondersteunen in het vinden en behouden van een regulier betaalde baan. Een vergelijkende studie zou dit echter moeten uitwijzen. Verder onderzoek zou bovendien aandacht moeten hebben voor alle factoren die van invloed zijn op verminderd werk functioneren, zoals stigma, werkomstandigheden en inter-actie tussen de persoon en omgeving.

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CURRICULUM VITAE

Trees Juurlink was born on March 5th 1988, in Coevorden, the Netherlands. After completing her secondary education at Vechtdal College in Hardenberg, she spent a gap year in Finland. Back in the Netherlands Trees obtained a bachelor degree in Social Work at Windesheim in Zwolle in 2010. She worked as a clinical social worker in the specialized treatment of people with severe complex traumas and at a treatment group for people with addictive disorders. In 2013 she obtained her master degree in Cultural Anthropology. After her master research on identity and belonging in modern Indonesia in Yogyakarta, she moved to Amsterdam. She briefly worked at both GGZ inGeest and Noord Holland Noord at various wards and outpatient clinics after which she started as a vocational rehabilitation worker at a outreach team (F-ACT) at GGZ inGeest. After a year she started her training to become an IPS coach to support patients with severe mental illness in gaining and maintaining competitive employment.

In 2016, Trees started her doctoral studies under supervision of Prof. dr. Aartjan Beekman, Prof. dr. Han Anema, dr. Femke Lamers, and dr. Hein van Marle. Her work and PhD thesis focused on employment and work functioning in individuals with personality disorders, and specifically symptoms of borderline personality. During her PhD, Trees visited Orygen Youth mental health in Melbourne Australia to collaborate with Prof. dr. Andrew Chanen on a project examining occupational and educational outcomes in young people with borderline personality disorder.

Since September 2020, Trees works as a researcher at the department of Public and Occupational Health, Amsterdam UMC at the research group of Prof. dr. Han Anema and KCVG (Research Center for Insurance Medicine, Kenniscentrum voor Verzekeringsgeneeskunde).