

# Individual placement and support effectiveness for personality disorders compared with other mental disorders: a retrospective study

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## Summary

**INTRODUCTION:** People with personality disorders show severe work impairments. Individual Placement and Support is the most efficient vocational rehabilitation model for people with mental illnesses. However, no study has shown its effectiveness for people with personality disorders from different clusters. This study aims at comparing this program's effectiveness in four groups: personality disorder clusters A, B, and C, and other mental disorders.

**METHOD:** We conducted a retrospective record review study on supported employment follow-up data from four centres of the Community Psychiatry Wards of Lausanne University Hospital and the Nant Foundation (Switzerland). We selected all patients who participated in the programme between 2014 and 2020, except for those with unclear diagnoses and those with less than 9 months of ongoing follow-up as of 31 December 2020. Activity type, activity length, time before finding a job and income were compared between the four groups.

**RESULTS:** Individuals with personality disorders clusters A (n = 26) and B (n = 97) had poorer vocational outcomes than those in Cluster C (n = 34) or without personality disorder (n = 309).

Participants in cluster B showed the highest level of difficulty, specifically at finding employment. **CONCLUSION:** Individual Placement and Support is less effective for participants with personality disorder clusters A and especially B than for other groups. A reconfiguration of the programme for this population who present significant work impairments might be warranted.

## Introduction

Having a personality disorder negatively impacts work functioning [1]. It is associated with a low education level, work conflicts, dismissals, demotions, unemployment [2], disability [3] and early retirement [4]. The Organisation for Economic Co-operation and Development [5] reported 80% of unemployment in personality disorder inpatients in Switzerland; this rate is similar for people with severe mental illnesses (e.g., schizophrenia, severe mood disorders). Moreover, when interviewed about challenging staff members,

employers frequently describe issues with interpersonal relationships, responsibility for one's actions, emotional stability and acceptance of instructions. These impairments that are typical to personality disorder often result in dismissals [6, 7]. Cluster B (i.e., dramatic, erratic), including antisocial, borderline, histrionic, and narcissistic personality disorders, is the one most associated with disability – earlier age of work disability and failure to return to work. Cluster A (i.e., odd, eccentric), such as paranoid and schizoid personality disorders, is second, with an expanded risk of disability.

Cluster C (i.e., fearful, anxious), including avoidant, dependent, and obsessive-compulsive personality disorders, is often considered the least problematic [2, 8], with a similar functional impairment level as other common disorders [9].

Vocational rehabilitation programmes have been developed to help psychiatric patients regain employment. The Individual Placement and Support (IPS) model of supported employment gained worldwide interest and demonstrated the best efficacy, notably higher employment rates and fewer days before finding a job compared with control conditions [10]. IPS targets quick reintegration of the patient into the competitive job market (i.e. regular paid jobs available to everyone, with equal conditions for all workers), stating that employment contributes greatly to their well-being by reducing symptoms and providing meaning to their lives. Anyone with mental illnesses can join IPS and benefit from the individual support the job coaches offer [11].

IPS appeared in the early 1990s and was created specifically for people with severe mental illnesses, whose work rehabilitation is affected by stigma [12], cognitive deficits [13], increased absenteeism [14] and decreased work performance due to their symptoms [1]. Finding satisfaction in their social role is their primary motivation to work [15] (Black et al., 2019). Supported employment shows effectiveness in professionally reintegrating this population [16]. People with personality disorders display different rehabilitation-related challenges. These disorders are characterised

less by symptom presentation than by functional, including work, impairments [17]. Dahl et al. [18] argue that advances in vocational rehabilitation programs are needed for these individuals.

Lately, IPS has been studied in populations beyond severe mental illnesses [11]. However, only two recent studies by Juurlink et al. [19, 20] have addressed the case of personality disorders. They indicated that IPS would work as well for personality disorder patients as for people with severe mental illness. However, personality disorder subtypes were not compared. They, as well as several researchers in the past 5 years [11, 21], emphasised that further research on IPS effectiveness for people suffering from personality disorders is necessary.

This study aimed to explore differences in vocational results when participants exit IPS programmes, according to four groups: personality disorders clusters A, B, and C, and other mental disorders. Given levels of general impairment of these groups [2, 8, 9], we hypothesised that they would differ in terms of vocational outcome, with IPS participants in personality disorder clusters A and especially B showing poorer success than those in cluster C and with other disorders than personality disorder.

## Methods

### Setting

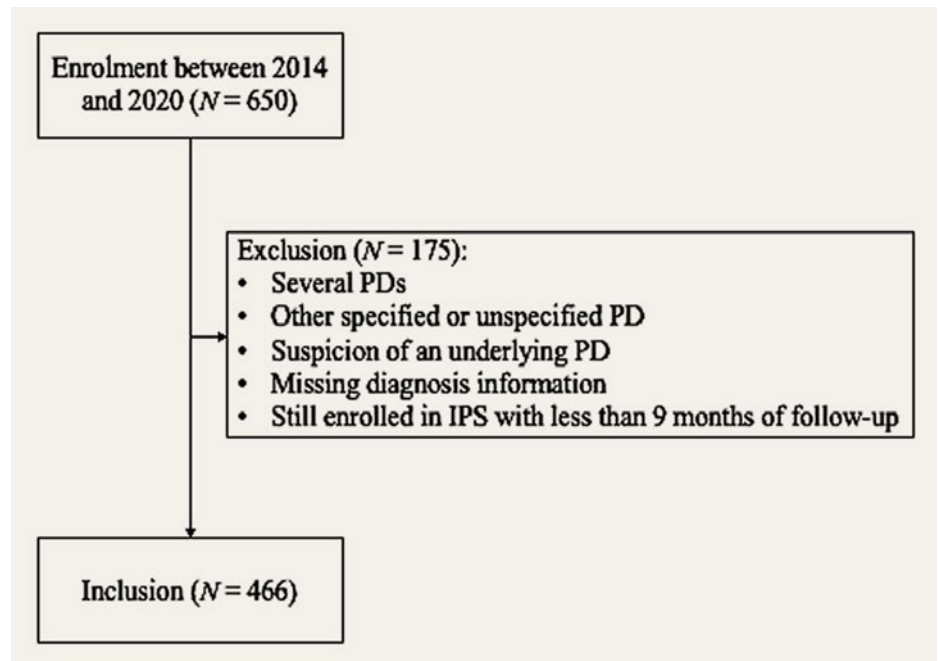
Since 2009, the IPS model has been implemented at RESSORT, a community network programme for supported employment developed by the Community Psychiatry Department of Lausanne University Hospital and extended to the Nant Foundation (Switzerland), whereby four centres follow approximately 250 IPS participants yearly. Additional details on how IPS was implemented at RESSORT are described elsewhere [21–23].

IPS support time is unlimited; intervention length varies considerably between participants depending on their needs. When engaging in IPS, participants are either unemployed or employed and seek assistance in finding or preserving an activity (job or training) [24].

This research was a retrospective record review study using data from RESSORT. Access to existing routine institutional records was granted by the Human Research Ethics Committee of the Canton Vaud (protocol #2016-00768).

### Participants

We extracted data from 650 patients who started participating in IPS at RESSORT between



**Figure 1:** Sampling. IPS = Individual Placement and Support; PD = personality disorder.

1 January 2014 and 31 December 2020. We excluded RESSORT's IPS participants diagnosed with more than one personality disorder or other specified or unspecified personality disorders in this study since detailed diagnoses were not available and so we could not categorise them into one of the three DSM-5 clusters [1]. We also excluded participants with suspected but not formally diagnosed underlying personality disorders to avoid confusion in the results, as well as participants with missing diagnosis information.

Finally, because few jobs are found by persisting in IPS beyond 9 months [25], records from patients with fewer than 9 months of ongoing follow-up at the end of 2020 were not included. Those might not yet have had enough time to display professional evolution. Conversely, those who chose to quit the programme before 9 months were considered to have reached their final goal and were therefore included.

### Measures

RESSORT database consists of participants' demographic and routine vocational information. It includes baseline evaluations completed when patients entered the programme and trimonthly evaluations until they exited the programme or at last available evaluation for patients who were still enrolled when data were extracted. Participants' diagnoses, as assessed by their personal psychiatrists, were taken from their admission forms.

Six variables describing vocational outcomes were extracted from the database. The

first variable was *activity type*, with four different values: (a) no activity; (b) sheltered job, internship, or job financed by disability insurance; (c) training; and (d) competitive employment. The second variable was *overall employment*, which was the proportion of participants who were ever competitively employed within IPS. The third variable was *earnings main source*: salary versus another source of earnings (e.g., social or disability benefits). The fourth and fifth variables were *total duration of activity* and *longest period of activity* throughout IPS (either in competitive employment or in training, depending on participant's specific goal). Finally, we measured *time to first employment* – time between patient's admission to the programme and their first competitive employment.

### Statistical analyses

After displaying descriptive statistics for each group, we compared the four groups (personality disorder clusters A, B, and C, and no personality disorder) on all outcome variables. Except for time to first employment, we used a Bayesian approach, which represents an alternative to the classic problem of multiple comparisons and allows an assessment of support for the null hypothesis [26, 27]. All 15 possible models were estimated. The first one was the homogeneous model (1, 2, 3, 4), stating that groups do not differ and are issued from the same distribution. It corresponds to the null hypothesis in the classical statistical framework. Another model was the heterogeneous model: (1) (2) (3) (4) (i.e., all groups are differ-

ent from each other / issued from a different distribution). All other possible combinations – for instance (1, 2, 3), (4) or (1, 3), (2, 4) – were estimated. For continuous variables, the best (i.e., statistically strongest) possible Gaussian model ( $m, s^2$ ) was determined by using the Bayesian information criterion. For nominal variables, the best multinomial model was determined using the exact likelihood with a uniform prior on all parameters [28]. An equal prior probability of 1/15 was assumed for all models so that no model was favoured. This could be seen as an “uninformative prior” which avoids the estimation of the posterior probability to be influenced by any subjective a priori belief. In this context, sensitivity analysis is not warranted. The Bayes factor was computed and provided a comparison between the best model and the homogenous model. A Bayes factor of 4 would indicate that the best model is 4 times more likely to be true than the homogeneous model. Values over 3 are generally considered sufficiently important to favour one model over another [29, 30].

Additionally, activity duration analyses were run without participants who were never competitively active throughout IPS participation, to avoid a bias with those participants lowering the results, thus reflecting overall activity rates rather than activity maintenance. Kaplan-Meier survival curves, associated to a log-rank test aiming to compare survival of the groups, were used to illustrate time to first

employment. This analysis was run without participants who were never employed within IPS and those who were already employed at admission. Missing data were dealt with by listwise deletion. IBM SPSS Statistics (Version 26) and the AtelieR package for R [38] were used. Differences were considered significant at  $p < .05$ .

## Results

The final sample included 466 participants comprised of: (1) 26 patients in cluster A, (2) 97 in cluster B, (3) 34 in cluster C, and (4) 309 in the no personality disorder group. The groups' sociodemographic characteristics and comorbidities are presented in table 1. The groups did not differ in mean age, mean time in IPS, or rate of participants who completed only basic education, and were active at baseline. They did differ in gender, with men being the majority in all groups except cluster B and particularly so in cluster A. However, post hoc analyses did not show gender differences for any outcome. They also differed in rate of participants who had been active within the past 12 months before admission, with a larger proportion of participants in clusters B and C having had a recent activity. Psychiatric conditions other than were equally distributed between the groups, apart from psychotic disorders and anxiety disorders, which were more prevalent in clusters A and C, respectively. The same

trends were found in the subsamples of the analyses for which some participants were excluded. More than half of the participants had a comorbid mental condition. The different types were not equally present in all clusters, especially cluster B, which was mainly composed of borderline, and very few obsessive-compulsive disorder patients were present in cluster C, as shown in table 2.

Table 3 presents the outcomes for activity type, overall employment, main source of earnings, total duration of activity and longest period of activity at the end of the programme. Regarding the whole sample, two patterns emerged from the analyses:

For activity type, cluster B strongly differed from all other groups, with a lower competitive employment rate (slightly above 1/6 versus almost 1/3) and a higher proportion of total inactivity (2/3 versus slightly over 1/2) compared with the other groups.

For the other variables, clusters A and B contrasted with cluster C and the no personality disorder group. This last pattern was statistically weaker but more recurrent throughout the different variables. Overall employment rate (1/3 versus almost 1/2), rate of people receiving a salary as a main source of earnings (1/5 versus 1/3), mean activity total duration and longest period of activity duration (twice as low) were lower in clusters A and B than in the other groups. The model for this last finding was very likely.

**Table 1: Characteristics of each study group.**

Characteristic	PD cluster A (n = 26; 5.6%)	PD cluster B (n = 97; 20.8%)	PD cluster C (n = 34; 7.3%)	No PD (n = 309; 66.3%)	p-value
Men, % (n = 466)	92.3	36.1	67.6	57.0	<0.001 <sup>a</sup>
Mean age (SD), years (n = 466) <sup>c</sup>	38.7 (11.9)	37.1 (10.3)	38.4 (10.7)	35.0 (10.5)	0.07 <sup>b</sup>
In a vocational activity within the past 12 months, % (n = 459) <sup>c</sup>	53.8	69.1	69.7	54.8	0.04 <sup>a</sup>
Basic educational level (compulsory school only), % (n = 459) <sup>c</sup>	38.5	39.6	47.1	45.9	0.65 <sup>a</sup>
Competitively employed or in training, % (N = 466) <sup>c</sup>	15.4	13.4	20.6	24.6	0.11 <sup>a</sup>
Condition other than PD, % (n = 466) <sup>c</sup>	50.0	52.6	64.7	100.0	<0.001 <sup>a</sup>
• Psychotic disorders	19.2	2.1	5.9	33.3	<0.001 <sup>a</sup>
• Mood disorders	26.9	28.9	32.4	43.4	0.03 <sup>a</sup>
• Anxiety disorders	3.8	13.4	26.5	26.2	0.006 <sup>a</sup>
• Other mental disorders	7.7	12.4	23.5	15.2	0.31 <sup>a</sup>
Mean time enrolled in IPS (SD), months (n = 466)	8.6 (8.4)	10.6 (10.4)	11.4 (9.6)	11.8 (10.4)	0.41 <sup>b</sup>

IPS: Individual Placement and Support; PD: personality disorder. <sup>a</sup> Pearson's chi-square; <sup>b</sup> analysis of variance; <sup>c</sup> at baseline

**Table 2: Number of participants with each type of personality disorder.**

PD cluster	PD type	Number of participants (% of the cluster to which it belongs)
Cluster A	Paranoid PD	9 (34.6)
	Schizoid PD	17 (65.4)
Cluster B	Antisocial PD	7 (7.2)
	Borderline PD	81 (83.5)
	Histrionic PD	0 (0)
	Narcissistic PD	9 (9.3)
Cluster C	Avoidant PD	16 (47.1)
	Dependent PD	16 (47.1)
	Obsessive-compulsive PD	2 (5.8)

PD: personality disorder

Among the participants who were ever active within IPS, a third pattern emerged, with the four groups being equal. Activity durations were also slightly lower in clusters A and B (6 versus 8.5 months) than in the other categories, although no group difference was statistically significant.

The survival curves (fig. 2) revealed that participants in cluster B reached activity significantly more slowly than all other groups ( $p = 0.04$ ). All participants in clusters A and C who found a job within IPS did so within the first year. However, these two groups were very small. It took more than 2 years (27 months) for people in the no personality disorder group and more than 3 years (37 months) for those in

cluster B to all reach employment for those who did. Moreover, after the first 6 months, the overall employment rate was consistently lower for cluster B than for all other groups.

### Discussion

This study investigated the effectiveness of the IPS model for patients with personality disorders. Several vocational outcome variables were compared between personality disorder clusters and patients without personality disorder. Better professional rehabilitation results were expected for no personality disorder and cluster C groups than for clusters A and especially B given their functional impairments [2, 8, 9]. Indeed, overall employment, last main

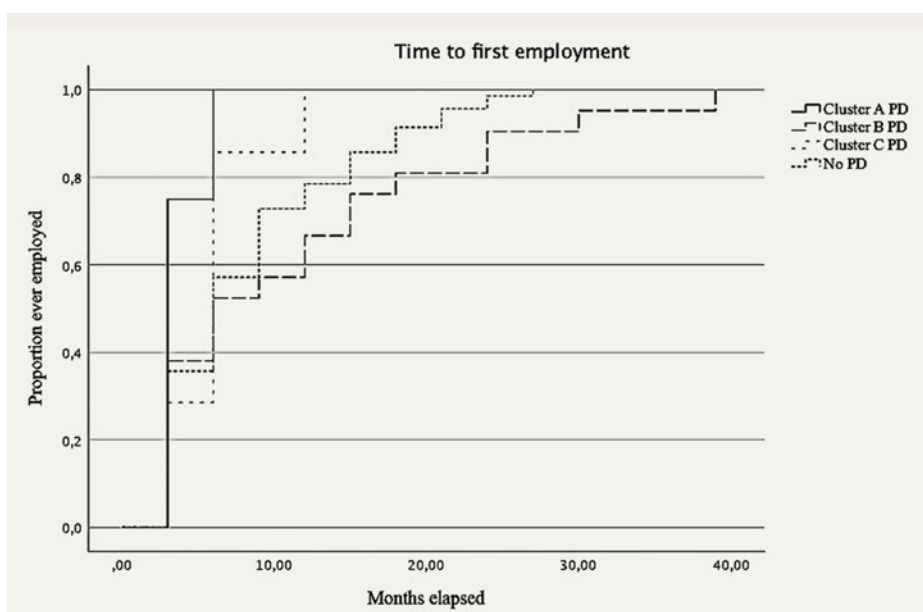
source of earnings and duration of activity were worse for participants in clusters A and B than in cluster C and the no personality disorder group.

Time to first employment and last activity type were the worst for participants in cluster B. Evidence for the latter outcome was quite strong. Cluster B was systematically less successful and differed from the no personality disorder group. This corroborates previous research stating that people in cluster A show work impairments, although to a lesser extent than those in cluster B [8].

It is surprising that the proportion of people receiving a salary as their main income was lower for people in clusters A and B, whereas the proportion of competitive employment was lower only for people in cluster B. This seemingly contradictory finding could be explained by the fact that some participants might be part-time employees and therefore, still receiving social benefits in addition to their income. Additionally, it is possible that some participants received a salary from their on-the-job training, even though they were not considered competitively employed.

Problems were anticipated for patients with personality disorders once employed, as their cognition, affectivity, interpersonal functioning and flexibility manifestations [1] cause conflicts at work [6]. This corroborates the fact that cluster B and C participants were more often professionally active within the last 12 months prior to admission than the other groups. This might be due to their ease of finding a job and a difficulty in keeping it [2, 6, 7]. Yet duration of activity did not differ between groups, which shows the capacity of people with any diagnosis to sustain an activity once obtained when accompanied within an IPS programme.

However, clusters A and B had shorter activity durations when the whole sample was taken into account. This result cannot be explained by difficulties to maintain an activity or a different length of time in IPS. Instead, it could be explained by a longer time necessary to reach first employment or by never obtaining employment. People with cluster B personality disorder's engagement in socially valued activities, such as work, may not typically stem from intrinsic motivation, but rather from a desire to seek approval [31]. This could reduce their opportunities for vocational rehabilitation. In comparison, patients with severe mental illnesses are motivated to engage in professional activities because they seek for meaning in their lives [15]. Moreover, patients with borderline personality disorder have an unstable self-image, notably resulting in sudden shifts in vocational aspirations [1] and likely leading



**Figure 2:** Time to first competitive employment for psychiatric patients who were ever employed during IPS and not employed at baseline. IPS = Individual Placement and Support; P: personality disorder. (PD cluster A,  $n = 21$ ; PD Cluster B,  $n = 21$ ; PD cluster C,  $n = 7$ ; no PD,  $n = 70$ )

**Table 3: IPS outcome at last evaluation – comparison between each study group.**

Outcomes	PD cluster A (n = 26)	PD cluster B (n = 97)	PD cluster C (N = 34)	No PD (n = 309)	Best model	Bayes factor against null hypothesis	Probability of the best model to be true
Activity type, % (n = 466)					(2) (1, 3, 4)	34.10	0.663
• Competitive employment	23.2	16.5	32.4	29.8			
• Training	3.8	13.4	5.9	8.1			
• Sheltered job, internship	11.5	4.1	8.8	13.6			
• None	61.5	66.0	52.9	48.5			
Overall employment, % (n = 466)	30.8	30.9	38.2	42.7	(1, 2) (3, 4)	1.51	0.200
Salary as earnings main source, % (n = 465)	19.2	18.7	32.4	29.1	(1, 2) (3, 4)	1.60	0.257
Mean activity total duration (SD), months (n = 466)	2.31 (4.01)	2.44 (5.26)	3.71 (5.86)	4.19 (6.46)	(1, 2) (3, 4)	1.84	0.337
Mean longest period of activity (SD), months (n = 466)	2.08 (3.77)	2.13 (3.80)	3.35 (5.16)	3.87 (5.84)	(1, 2) (3, 4)	4.59	0.410
Mean activity total duration (SD), months (n = 197) <sup>a</sup>	6.75 (4.46)	6.94 (7.25)	9.23 (6.18)	8.56 (7.04)	(1, 2, 3, 4)	1.00	0.540
Mean longest period of activity duration (SD), months (n = 197) <sup>a</sup>	6.00 (4.54)	6.00 (4.44)	8.31 (5.22)	7.85 (6.28)	(1, 2, 3, 4)	1.00	0.436

IPS: Individual Placement and Support; PD: personality disorder; SD: standard deviation

<sup>a</sup> Analyses performed only on participants who ever had a vocational activity during enrolment in IPS (PD cluster A, n = 8; PD cluster B, N = 32; PD cluster C, n = 13; no PD, n = 144).

to regular changes in professional projects, altering these patients' attempts at professional rehabilitation. Finally, the interpersonal conflicts described above could hinder IPS job coaches' efforts to place individuals in the labour market. Results regarding cluster B might be drawn by limitations associated with borderline personality disorder as it represented a large proportion of this group.

IPS is not conceptually illness oriented [32]. Job coaches are not trained in treating mental disorders. They focus on patients' work impairments and not on their mental disorders. They are not necessarily aware of their patients' diagnoses. This helps combat stigma but could sometimes become an issue. The coaching process of people in cluster B seems challenging, whereas the subsequent job sustainment support seems equally efficacious for all groups. Maybe job coaches would benefit from knowing early that their patients belong to cluster B in order to adapt their own attitudes toward them.

Finally, cluster C is indeed associated with the no personality disorder group, for which IPS success has already been shown [11]. Patients in these two groups have fewer difficulties regarding work than people in the other clusters, which is consistent with the literature [2, 9]. This could explain the equal IPS results in personality disorders and se-

vere mental illness groups found by Juurlink et al. [19, 20]. Cluster C patients demonstrate traits that are valuable in the job market, such as conscientiousness [33] and fear of negative feedback [1], which might motivate them to follow coaches' advice and function well at work [2, 9]. IPS job coaches might emphasise these qualities to improve their self-confidence and introduce them positively to potential employers.

As this study was conducted in one region of Switzerland, it naturally results in place-specific characteristics. Current conclusions might not be transferable to other IPS centres.

### However, there was no within-group sex difference in any outcome.

Also, the distribution of gender and psychotic and anxiety disorders differed between the groups, which could have, to some extent, influenced the results. However, the sample characteristics and the high proportion of comorbid mental conditions in the personality disorder groups are consistent with epidemiological data [34, 35]. An effect of gender could have been expected as men and women are not equal in the labour market, with men being

favoured [37], notably regarding recruitment [36]. However, there was no within-group sex difference in any outcome. We therefore argue that mental condition rather than gender can account for our findings. Additionally, the retrospective database resulted in several limitations. First, diagnoses were based on evaluations of personal psychiatrists who treat patients, who were not assessed for the purpose of this research. Second, activity type was reported trimonthly, resulting in less accurate data than when assessed daily or weekly. However, we do not believe that the activity situation is extremely time sensitive. Last, patients' variable length of duration in IPS could have impacted the results. For example, patients participating in the programme for a brief time might have had fewer opportunities to find an activity. Moreover, those quitting IPS immediately after finding a job showed a shorter activity duration although they might have maintained their employment afterwards.

Additional prospective and controlled studies should be conducted in other places on IPS's effectiveness for patients with personality disorders to avoid the limitations encountered. Studying personality disorders as subgroups (e.g., based on clusters or individual diagnoses) might be warranted, as this category is broad and heterogeneous.

## Conclusion

IPS was less effective for participants with personality disorders in clusters A and especially B than for the other subjects. Belonging to cluster C did not negatively affect patients' course in the programme. Participants from cluster B required more time to find a job and were less often employed at the end of IPS in comparison with other participants. We can confidently argue that IPS may benefit from a reconfiguration for patients in cluster B, for example, by providing specific training to IPS teams, such as the Good Psychiatric Management for Borderline Personality Disorder [39], which includes focus on social rehabilitation, notably through work.

## Disclosure Statement

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