Treatment of Borderline Personality Disorder: Is Supply Adequate to Meet Public Health Needs?

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Objectives: This study aimed to assess the supply of and demand for treatment of borderline personality disorder (BPD) to inform current standards of care and training in the context of available resources worldwide.

Methods: The total supply of mental health professionals and mental health professionals certified in specialist evidence-based treatments for BPD was estimated for 22 countries by using data from publicly available sources and training programs. BPD prevalence and treatment-seeking rates were drawn from large-scale national epidemiological studies. Ratios of treatment-seeking patients to available providers were computed to assess whether current systems are able to meet demand. Training and certification requirements were summarized.

Results: The ratio of treatment-seeking patients with BPD to mental health professionals (irrespective of professionals' interest or training in treating BPD) ranged from approximately 4:1 in Australia, the Netherlands, and Norway to 192:1 in Singapore. The ratio of treatment-seeking patients to clinicians certified in providing evidence-based care ranged from 49:1 in Norway to 148,215:1 in Mexico. Certification requirements differed by treatment and by country.

Conclusions: Shortages of both providers available to treat BPD and providers certified in specialist treatments of BPD exist in most of the 22 countries studied. In well-resourced countries, training clinicians to provide generalist or abbreviated treatments for BPD, in addition to specialist treatments, could help address the current implementation gap. More resource-efficient alternatives must be considered in countries with insufficient staff to implement even generalist treatments. Consideration of realistic allocation of care may shape future guidelines and standards of BPD treatments, beyond intensive evidence-based psychotherapies.

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Borderline personality disorder (BPD) is a prevalent (1), disabling (2), and potentially fatal mental illness, with rates of suicide completion and burden of disease similar to those of schizophrenia (3, 4). Although only a fraction of individuals with BPD seek psychological or psychiatric care (5), they remain overrepresented in acute psychiatric care settings, constituting an estimated 9%−22% of outpatient clinic cases (6, 7) and 20%−25% of inpatient admissions (7, 8). Costs to society associated with personality disorders have been estimated at $12,696–$19,231 per patient yearly, more than double the costs associated with depression (9). Given the severity of the disorder, its prevalence in treatment settings, and high associated costs, there is an epidemiological and economic imperative for health systems to be able to address BPD effectively worldwide.

BPD was formerly considered a "wastebasket diagnosis," given to patients who were thought to be "untreatable" (10). However, there are now a number of specialist evidence-based treatments for BPD (11, 12). Specialist evidence-based manualized treatments for BPD include dialectical behavior

HIGHLIGHTS

- Several evidence-based treatments exist for borderline personality disorder (BPD). However, their implementation is limited by the commitment of time, financial investment, and institutional support required to provide them.
- Few countries worldwide have a sufficient number of mental health care providers to provide care for the estimated number of treatment-seeking individuals with BPD, and only a fraction of these providers are certified in a BPD-specific specialist treatment.
- Certification requirements differ by treatment and by country.
- Implementation of specialized evidence-based treatments alone cannot feasibly address existing public health needs. Therefore, standards of care should include a realistic range of alternatives, such as generalist models, stepped care, and brief treatments.

therapy (DBT) (13, 14), mentalization-based treatment (MBT) (15, 16), schema-focused therapy (SFT) (17, 18), and transference-focused psychotherapy (TFP) (19, 20). Although psychotherapies are considered the treatment of choice in guidelines for the clinical management of BPD (21), referral to psychotherapy as a first step of treatment after diagnosis is done only in a minority of cases mainly because of the general insufficient supply of psychotherapists—and especially of those trained in BPD-specific approaches (22).

Furthermore, the implementation and survival of programs providing psychotherapeutic approaches to BPD (e.g., DBT and MBT) remain fragile (23–25). Obstacles to establishing and maintaining treatment programs in the evidence-based treatments for BPD include lack of support by public health authorities or program directors (25–28); lack of time, resources, and funds to provide or attend training (24–26, 28); difficulty recruiting and retaining staff, as well as staff turnover (24–28); lack of capacity and organizational issues (22, 23, 27, 29); and instability of team dynamics, communication, and supervision (23, 24, 27, 30, 31). Consequently, teams providing evidence-based treatments for BPD struggle to survive. The probability of a DBT team surviving over 10 years is under 50% (24, 25).

Meta-analysis of randomized controlled trials (RCTs) for BPD has not shown that any of the evidence-based psychotherapies are superior to the others or that intensity or duration of treatment is related to outcome (11). In addition, structured clinical management (SCM) and general psychiatric management (GPM), which are less intensive generalist treatments expressly developed for BPD, have proven effective in attaining symptom reduction in two of the largest methodologically rigorous RCTs for BPD treatment in the literature (16, 32). SCM proved effective in reducing symptoms of BPD—most notably self-harm—within the first 6 months of treatment but was outpaced by MBT by 18 months (16). GPM performed as well as DBT across a range of outcomes (32). However, these approaches have yet to be incorporated in clinical guidelines or algorithms. The quality and quantity of evidence demonstrating superiority of treatments often dictates clinical practice, while feasibility and accessibility considerations are ignored (33).

The paradox of progress in treating BPD is that effective treatments exist but appear to be available to only a fraction of patients seeking care. To our knowledge, no studies have estimated the supply of and demand for treatment of BPD. Toward that end, this study examined the prevalence of BPD and estimated proportion of individuals with BPD who seek treatment, the total number of mental health care providers who could theoretically provide care for patients with BPD, the number of providers accredited in evidence-based treatments for BPD, and the training and practice requirements for specialist and generalist treatments. The aim was to assess the supply of and demand for treatment of BPD to inform realistic standards of care and training in the context of available resources worldwide.

METHODS

The data considered in this analysis were all obtained from sources published between 2010 and early 2019 and covered the years 2001 to 2018.

Country Selection

Countries were included in this study if they had publicly available certification data for two or more evidence-based BPD therapies. This led to the inclusion of a total of 22 countries.

Assessing Supply

Total supply of psychiatrists, psychologists, and clinical social workers was estimated for each country considered in this analysis by using data from the World Health Organization (WHO) (34–36). A conservative estimate of the number of professionals already providing evidence-based treatment for BPD was made by using the number of providers listed as certified in DBT, MBT, SFT, or TFP. This information was acquired from publicly available sources (www.dachverband-dbt.de, www.dbt-lbc.org, www.dbt.no, www.institutformentalisering.dk, www.inst-mbt.no, www.schematherapysociety.org, www.istfp.org, www.register-mbt.nl, www.sfdbt.org, www.sidbt.it, www.annafreud.org, and www.bpc.org.uk/mbt-roster) and from the relevant training centers. In cases where certified teams were listed rather than individual therapists, the number of certified individuals was estimated by using team requirements posited by the certifying bodies. This was the case for DBT in Germany, Austria, Switzerland, the Netherlands, and Belgium. A team was counted as three certified therapists in Germany, Austria, and Switzerland and as two certified therapists in the Netherlands and Belgium.

Assessing Demand for BPD Treatment

Population data were abstracted from the United Nations (37). A prevalence rate of 2.7% (National Epidemiologic Survey on Alcohol and Related Conditions) (1) and a rate of treatment seeking per year of 17% (National Comorbidity Survey–Replication) (5) were drawn from large-scale epidemiological surveys. These rates were chosen because they were derived from a well-characterized nationally representative population of the civilian noninstitutionalized adult population. "Treatment seeking" was defined as the proportion of the prevalence of persons who sought psychiatric or psychological consultation over the course of 1 year.

Analysis

Data on supply of and demand for treatment were analyzed to estimate the number of treatment-seeking patients with BPD per psychiatrist, psychologist, and social worker in a given country per year, the number of treatment-seeking patients per clinician certified in an evidence-based treatment for BPD in a given country per year, and the proportion of each professional's caseload required to address demand posed by these treatment-seeking patients.

TABLE 1. Ratio between prevalence of treatment seeking for borderline personality disorder (BPD) and supply of mental health care providers, by country

Country	Supply of mental health care providers		Total population	BPD prevalence	Treatment-seeking BPD prevalence	Ratio between treatment-seeking BPD prevalence and providers		Generalist treatments caseload requirements	
	Total providers	Total EBT-certified providers				Total providers	EBT-certified providers	Proportion of weekly caseload (%)[a]	Hours per week
Australia	29,766	39	24,451,000	660,177	112,230	3.8:1	2,878:1	10–11	4
Netherlands	18,627	127	17,036,000	459,972	78,195	4.2:1	616:1	11–12	4–5
Norway	5,623	498	5,305,000	143,235	24,350	4.3:1	49:1	11–13	4–5
United States	328,695	251	324,459,000	8,760,393	1,489,267	4.5:1	5,933:1	12–13	5
Austria	8,353	22	8,735,000	235,845	40,094	4.8:1	1,822:1	12–14	5–6
Switzerland	6,243	52	8,476,000	228,852	38,905	6.2:1	748:1	16–18	6–7
Germany	56,387	342	82,114,000	2,217,078	376,903	6.7:1	1,102:1	17–20	7–8
Canada	20,053	18	36,624,000	988,848	168,104	8.4:1	9,339:1	21–25	9–10
Belgium	5,413	19	11,429,000	308,583	52,459	9.7:1	2,761:1	25–29	10–11
Poland	17,341	9	38,171,000	1,030,617	175,205	10.1:1	19,467:1	26–30	10–12
Lithuania	1,099	2	2,890,000	78,030	13,265	12.1:1	6,633:1	31–36	12–14
Sweden	3,665	37	9,911,000	267,597	45,491	12.4:1	1,230:1	32–37	13–15
United Kingdom	18,698	378	66,182,000	1,786,914	303,775	16.3:1	804:1	42–48	17–19
Denmark	1,580	18	5,734,000	154,818	26,319	16.7:1	1,462:1	43–49	17–20
Russia	25,900	13	143,990,000	3,887,730	660,914	25.5:1	50,840:1	65–75	26–30
Italy	10,562	32	59,360,000	1,602,720	272,462	25.8:1	8,514:1	66–76	26–30
South Korea	8,176	2	50,986,000	1,376,622	234,026	28.6:1	117,013:1	73–84	29–34
Spain	7,234	30	46,354,000	1,251,558	212,765	29.4:1	7,092:1	75–86	30–35
Ireland	640	20	4,762,000	128,574	21,858	34.2:1	1,093:1	88–101	35–40
Turkey	4,798	9	80,745,000	2,180,115	370,620	77.2:1	41,180:1	198–227	79–91
Mexico	4,922	4	129,163,000	3,487,401	592,858	120:1	148,215:1	309–354	124–142
Singapore	136	2	5,709,000	154,143	26,204	192:1	13,102:1	494–567	198–227

[a] Assuming a caseload of 34–39 patients per week relative to the ratio of treatment-seeking BPD prevalence to total mental health care providers. In the Netherlands, for example, 4.2 patients would account for 11%–12% of a 34–39 patient weekly caseload.

Information on Training and Certification or Accreditation Requirements

Information regarding specialized evidence-based treatments and generalist treatment approaches for BPD was acquired from publicly available sources (www.dachverband-dbt.de, www.dbt-lbc.org, www.dbt.no, www.institutformentalisering.dk, www.inst-mbt.no, www.schematherapysociety.org, www.istfp.org, www.register-mbt.nl, www.sfdbt.org, www.sidbt.it, www.annafreud.org, www.bpc.org.uk/mbt-roster, www.asociacionespanoladedbt.com, www.dbt.cmhe.org, www.behavioraltech.org, www.borderlinedisorders.com, www.terapiascontextuales.mx/dbtmexico, www.dbtrussia.org, www.dbt-scandinavia.se, www.dialexisadvies.nl, and www.ptdbt.pl) (38), cost-effectiveness studies (39, 40), and training centers. Estimated maximum weekly caseloads were computed by using the components of each therapy (e.g., individual sessions, group, and consultation team), assuming a 40-hour work week and 1-hour sessions and not accounting for administrative time or lunch breaks.

RESULTS

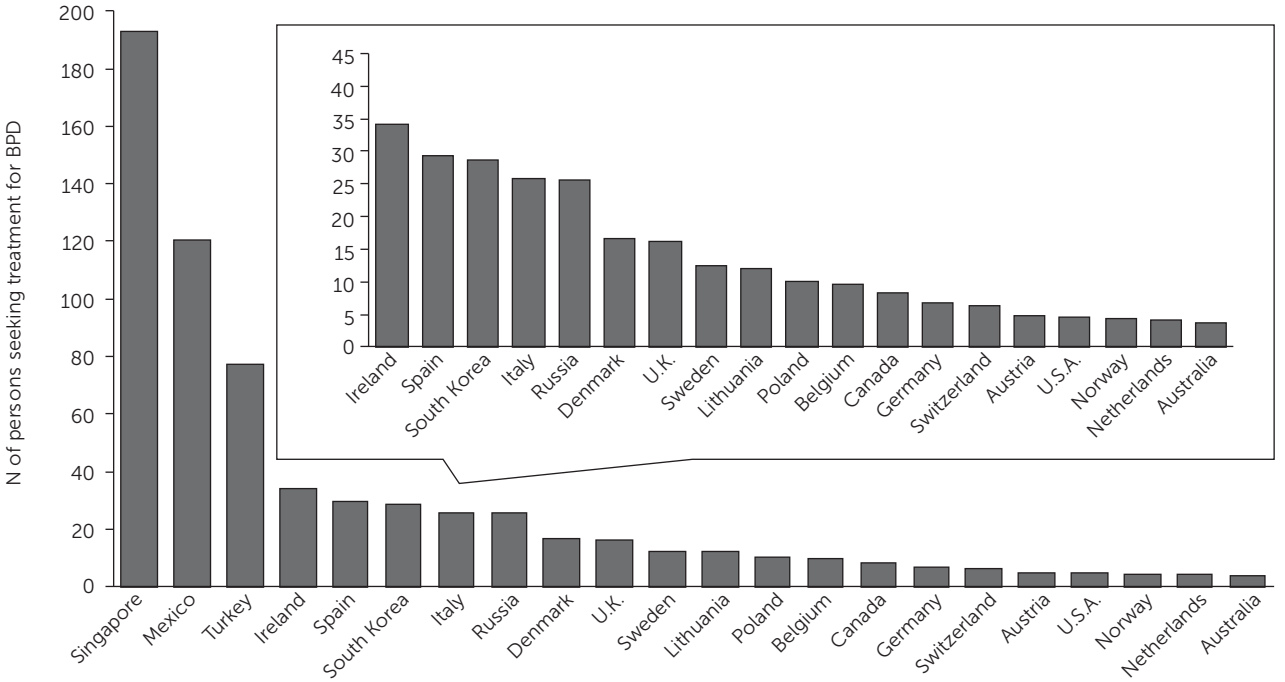
The total supply of psychiatrists, psychologists, and social workers per country in the 22 countries included in the study, the reported supply of clinicians certified in evidence-based treatments, and estimated demand for BPD treatment are summarized in Table 1. [Raw data are presented in an online supplement to this article.]

Number of treatment-seeking patients with BPD per mental health care professional ranged from approximately 4:1 in Australia, the Netherlands, and Norway to 192:1 in Singapore (Table 1 and Figure 1). Patient-to-provider ratios of under 10:1 were observed for the United States, Austria, Switzerland, Germany, Canada, and Belgium. Provider ratios between 10:1 and 35:1 were observed for all other countries, except Turkey, Mexico, and Singapore, which ranged from 77:1 to 192:1.

Number of treatment-seeking patients per mental health professional certified in evidence-based treatments ranged from 49:1 in Norway to 148,215:1 in Mexico (Table 1 and Figure 2). In countries that listed certified DBT teams, ratios of treatment-seeking patients per team ranged from 2,400:1 in the Netherlands to 7,500:1 in Belgium [see online supplement].

The proportion of each professional's caseload required to address the demand posed by treatment-seeking patients with BPD ranged from 10% to 567%, assuming the use of a generalist treatment such as SCM or GPM (Table 1). Caseload requirements would range from 10%—11% (4 hours, four cases weekly per 34–39 cases) in the Netherlands to 494%—567% (198–227 hours, 192 cases weekly per 34–39 cases) in Singapore.

FIGURE 1. Number of persons per year seeking treatment for borderline personality disorder (BPD) per mental health care provider, by country[a]



[a] A portion of the graph is enlarged for clarity. Lower numbers indicate more adequate staffing. In countries such as the Netherlands, for instance, each provider would have to see 4 or 5 persons with BPD per year to meet the demand posed by the treatment-seeking prevalence. In Singapore, however, each provider would have to see upwards of 180 persons annually.

The certification requirements and cost of training for each treatment, as well as standard implementation requirements and cost, are outlined in Table 2. DBT's certification procedures differ from country to country and are managed by several organizations internationally affiliated with Behavioral Tech, the primary DBT training organization in North America, founded by the treatment developer Marsha Linehan (Table 3). Organizations not considered in the table defer to the Linehan Board of Certification (www.dbt-scandinavia.se) or do not pose explicit certification procedures (www.asociacionespanoladedbt.com, www.terapiascontextuales.mx/dbtmexico, www.dbtrussia.org/dbt_main, www.ptdbt.pl). MBT, SFT, and TFP have a standard certification procedure internationally.

DISCUSSION

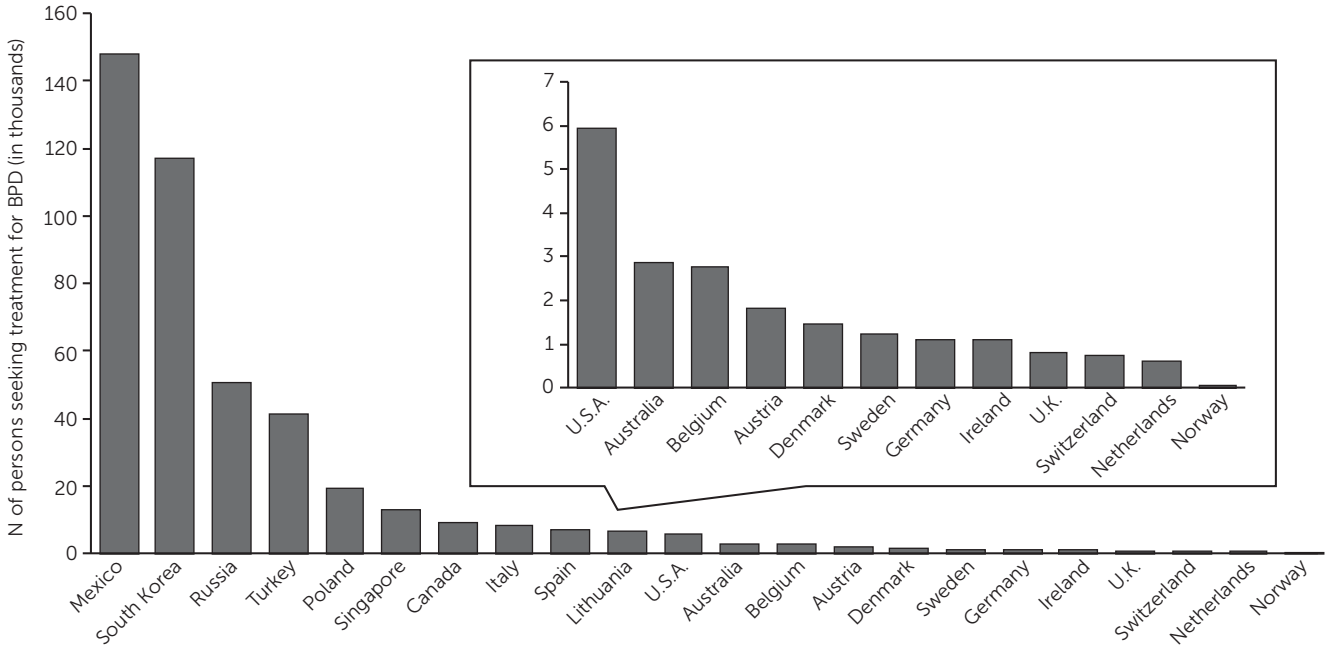
In this study, we assessed the supply and demand for BPD treatment, as well as implementation requirements, to consider current standards of care and training in the context of available resources worldwide.

Comparing the number of treatment-seeking individuals with BPD to the total number of mental health care professionals indicated that only a few countries could theoretically address public health needs. In countries with the most adequate supply of mental health professionals (i.e., Australia, the Netherlands, and Norway), if each provider treated approximately four persons with BPD per year, demand for treatment would be met (Figure 1). However, this ratio assumes that all clinicians accept patients with BPD into their caseload, which is improbable because of an array of possible factors, such as stigma or lack of training (41–43). If more clinicians could provide generalist treatment, such as SCM or GPM, this would correspond to 10%−11% of their caseload at minimum, which could theoretically be feasible in only Australia, the Netherlands, Norway, the United States, and Austria, where this number is on par with the estimated BPD prevalence of 9%−22% in outpatient settings (6, 7). In many other countries, such as Turkey, Mexico, and Singapore, providing even generalist care would be difficult, given the reported total number of mental health care professionals.

In no country considered in this study was the number of certified clinicians sufficient to meet the demand posed by BPD treatment seekers. For example, in Norway, which had the highest number of clinicians certified in evidence-based treatments (Table 1 and Figure 2), the ratio was 49:1, corresponding to 61–103 hours a week per clinician. In the Netherlands, the second best-resourced country, the ratio was in excess of 600:1, corresponding to 632–1,296 hours per week per clinician.

It is important to note that the number of certified clinicians is likely a significant underestimate of the total number of clinicians providing DBT, MBT, SFT, and TFP. Many clinicians who are not certified in these modalities have nonetheless received training in specialist treatments and treat BPD. For example, although only 198 clinicians are

FIGURE 2. Number of persons per year seeking treatment for borderline personality disorder (BPD) per clinician certified or accredited in a specialist evidence-based treatment for BPD, by country[a]



[a] A portion of the graph is enlarged for clarity. Lower numbers indicate more adequate staffing. In countries such as Norway, for instance, each provider would have to see approximately 50 persons with BPD annually to meet the demand posed by the treatment-seeking prevalence. In Mexico, however, each provider would have to see upwards of 140,000 persons annually.

listed as certified on the Linehan Board of Certification Web site (www.dbt-lbc.org), more than 1,427 teams have been intensively trained by Behavioral Tech, and more than 55,000 people have received some type of exposure to DBT since 1996 (personal communication, Tony DuBose, Behavioral Tech, October 30, 2018). Similarly, 389 clinicians are listed as certified on the MBT roster (www.bpc.org.uk/mbt-roster), but 923 have received MBT practitioner training, and 3,846 have received MBT basic training (personal communication, Billie Delaney, Anna Freud Centre, April 3, 2018). The actual number of clinicians providing specialized treatment for BPD likely lies somewhere in between those who have received some training and those who are certified. Either way, it remains clear that there is an insufficient number of clinicians to meet the demand posed by prevalence rates. Certification as a parameter of effective care in today's public health context may increase quality of care at the expense of quantity and availability of care.

In countries that theoretically have a sufficient number of clinicians to treat BPD, it is unlikely that the clinicians will all become trained in specialized evidence-based treatments for BPD. Not all clinicians are interested in treating, or supported adequately to treat, patients with BPD. Management of other common psychiatric disorders, such as major depressive disorder and generalized anxiety disorder, relies on pharmacological and psychotherapeutic interventions that tend to be within the skill set of a generalist mental health clinician or even a general practitioner (44–46). However, options for pharmacotherapy of BPD are limited (47), and evidence-based psychotherapies require extensive training (Table 2) (48). Further barriers to increasing the supply of care are related to a lack of clinician education and diagnostic training regarding BPD, clinician stigma, and lack of adequate insurance coverage for evidence-based therapies (43).

Although evidence-based treatments remain the gold standard, they can be considered an option among other approaches that require fewer resources. Generalist approaches, such as SCM (49) and GPM (50), may be a good option to help increase capacity to treat BPD, given their lower commitment in terms of training requirements and costs, as well as flexibility in practice (Table 2). Country-specific guidelines on the treatment of BPD, such as Guideline-Informed Treatment for Personality Disorders (51) in the Netherlands, also hold promise to increase capacity of health care systems to provide generalist care for BPD by optimizing existing care. Briefer and less intensive treatments can also increase capacity and reduce wait lists, including ten-session good psychiatric management (52); add-on treatments, such as systems training for emotional predictability and problem solving (53); or treatments with preliminary support, such as 6-month DBT (54, 55). Even shorter-term 12-week treatments can be as effective in reducing BPD symptoms as extended treatments lasting up to 24 months (56).

Given that demand for treatment outstrips supply globally, providing specialist, generalist, pared-down, and remote treatments as needed as part of a stepped care approach

TABLE 2. Certification requirements, implementation costs, and other characteristics of specialist evidence-based and generalist treatments for borderline personality disorder[a]

Treatment	Requirements for certification, accreditation, or recognition	Training cost[b]	Components	Length	Treatment cost[c]	Estimated maximum weekly caseload[d]
Specialist						
Dialectical behavior therapy	Differ from country to country (see Table 3)	$1,500–$3,700	3-person team (minimum), 2-hour group therapy, 1-hour individual therapy, 2-hour team consultation, 24-hour skills pager	1 year	$17,000 –$28,000	32
Mentalization-based treatment	5 days' worth of courses; 4 patients (24 sessions each), 4 hours of supervision per case	$1,600–$1,850	4-person team (minimum), 1.5-hour group therapy, 1-hour individual therapy, 1-hour team consultation	1–1.5 years	$22,000 ($33,000 total)[e]	34
Transference-focused psychotherapy	34 weekly seminars over 1 year (including supervision) or 6 days of workshops, 6 months home study and supervision	$3,000–$3,500	2 weekly individual sessions, supervision weekly	2–3 years	$20,500 ($82,000 total)[f]	19
Schema-focused therapy	8-day course (25 didactic hours and 15 hours of supervised role-playing dyads), 20 supervision sessions over 1 year, 2 cases (25 hours each) for a total of 80 sessions, 1 adherent session	$975–$3,400	1 or 2 individual sessions weekly, supervision weekly	2–3 years	$16,500 ($66,000 total)[f]	19–39
Generalist						
General psychiatric management	1-day training course	Free[g]–$295	Weekly to monthly individual sessions, group therapy and supervision encouraged	Open	$13,000	39
Structured clinical management	2-day training course	$260 (approximate)	Weekly individual sessions, 1.5-hour group therapy, 1-hour team consultation	1 year	$13,000	34

[a] Information about implementation costs were obtained from Brazier et al. (39) and van Asselt et al. (40).
[b] In U.S. $. Does not include cost of supervision.
[c] Cost per annum per patient (U.S. $).
[d] Estimated maximum weekly caseload based on treatment components and clinical experience.
[e] Costs over 1.5 years.
[f] Costs over 4 years.
[g] With grant funding.

(57–59) or clinical staging approach (60) could help facilitate the efficient allocation of limited resources. A stepped care approach would not be dissimilar to that used to structure treatment for many other psychiatric disorders (61–63). Models of stepped care can also facilitate transitions through different levels of care (e.g., emergency, inpatient, and outpatient). Such a model has proven effective in Australia, where a "stepped care brief intervention clinic" that facilitated step-down from emergency departments or inpatient units to outpatient care in the community succeeded in both reducing demand for hospital services and yielding cost savings of upwards of $2,500 per patient (64). Alternative pathways to care that are less circumscribed than intensive evidence-based psychotherapies provide options for patients who do not have the resources, willingness, or ability to engage in a more intensive treatment or who struggle to recover from hospitalizations or step-down from inpatient units.

However, neither generalist approaches to BPD nor a stepped care model will eliminate shortages of or barriers to care (65). These significant gaps between need for and availability of treatment remain high for most mental health

TABLE 3. Dialectical behavior therapy (DBT) certification requirements across various organizations worldwide[a]

Criterion	Australia (CMHE)	Norway (NSSF)	Netherlands and Belgium (Dialexis)	Italy (SIDBT)	German-speaking countries (DDBT)	British Isles (SfDBT)	United States (LBC)
Mental health profession training and licensure required	✓	✓	✓	✓	✓	✓	✓
Didactic time	5 days	10 days	10 days	10 days	12 days	70 hours	40 hours
Required N of patients or patient interaction hours	200 hours	na	na	1 patient	2 patients	4 patients	3 patients
Program implementation or team experience	✓ (12 months)	✓ (6–9 months)	—	✓ (12 months)	✓ (6 months)	✓ (12 months)	✓ (12 months)
Supervision	✓	✓	✓	✓	✓	✓	—
Weekly consultation team	—	✓	—	—	—	✓	✓
Examination	X	✓ (at home)	✓ (at home)	X	✓ (oral)	X	✓ (in person)
Letter of recommendation	✓	X	X	~	✓	X	✓
Case conceptualization	✓	✓	—	—	✓	✓	✓
External coding of a selection of recorded sessions	X	X	✓	~	✓	✓	✓
Mindfulness experience (e.g., retreat)	X	X	X	X	X	✓	✓
Approximate training cost	$2,000–$2,700	$2,400–$3,600	$2,300	?	$2,400	?	$1,500–$3,700[b]
Certification cost	$450; free if person attends comprehensive training	None; attained through training	?	? ($100 maintenance fee)	≥$230	?	$845; $95 maintenance yearly

[a] Abbreviations: CMHE, Centre for Mental Health Education; DDBT, Dachverband DBT (umbrella association of DBT); LBC, Linehan Board of Certification; NSSF, Nasjonalt Senter for Selvmordsforskning og -Forebygging (National Center for Suicide Research and Prevention); SfDBT, Society for DBT (Great Britain and the Republic of Ireland); SIDBT, Società Italiana DBT (Italian Society of DBT). ✓, explicitly required by the licensing organization; —, not explicitly required by the licensing organization; X, not explicitly required by the licensing organization but will likely be fulfilled through the certification process; ~, letter of recommendation required in the absence of adherence coding of an individual session; ?, not publicly listed.

[b] The lower end of this cost range refers to 1-week foundational training for persons wishing to join an existing DBT team in a supplementary role.

problems (66, 67). In several of the countries we considered and most countries worldwide, applying the stepped care model described above would not be feasible. Alternative, pared-down approaches, such as psychoeducation (68), might be more deliverable for subsets of patients in any country, as well as in countries where mental health care is sparse. Remote interventions, such as Web-based psychoeducation (69) or smartphone applications (70–73), could assist in providing some symptom improvement where barriers to treatment cannot be overcome or provider numbers are particularly low. However, in these countries, mental health literacy—that is, basic knowledge about mental illnesses and BPD—is needed for patients to access these resources (74, 75).

It is important to note six major methodological limitations of this investigation. First, we obtained our estimate of the number of mental health care professionals from the WHO. Some of these data differed from those reported elsewhere by the same government. In the case of Germany, for instance, the German government reported to the WHO that 15,900 medical doctors were providing mental health care nationally, whereas the German Society of Psychiatry, Psychotherapy, and Psychosomatics reported 29,826 (76). Second, variations in health care systems across countries are likely to give rise to rates of treatment seeking that differ from the 17% statistic (5) used in this analysis. Although this statistic was drawn from the most rigorous investigation of BPD treatment seeking to our knowledge, a smaller United Kingdom study found somewhat lower rates of treatment seeking through a psychiatrist (8.8%) and a psychologist (4.4%) but higher rates through a general practitioner (GP) (52.7% in the United Kingdom versus 18% in the United States [5]) in the context of a nationalized health coverage system (77). In other countries considered in this analysis, ratios of BPD treatment seekers to mental health care providers may thus differ, depending on the role of the GP.

Third, BPD prevalence is likely to vary from country to country because of a range of factors, such as degree of modernization (78, 79) and the gap between rich and poor (49). Prevalence estimates range widely from 0.15% in India (80) to 13% in Turkey (81). However, these rates are derived from studies with varying degrees of methodological rigor. Fourth, data on accreditation were limited by accuracy of the public registers of accredited and certified clinicians. An attempt was made to reduce these errors by contacting the certifying bodies, some of which provide only partial lists of those willing to be publicly listed, and some of which do not systematically post such information. Fifth, our calculations relied on the maximal caseload of patients with BPD that a clinician could theoretically have. However, realistic clinical guidelines (51) might recommend no more than 20 personality disorder cases seen on a weekly basis, given the emotional toll of work with this population (82). Finally, cross-national comparisons were complicated by the fact that certification procedures are not centralized and vary in stringency from country to country (Table 3). Although the accuracy of these sources appears variable, no publicly available standardized sources of information could serve as an alternative.

CONCLUSIONS

Despite the methodological limitations of this study, it remains clear that the supply of clinicians available to treat BPD is currently too low to meet demand in most countries. Although intensive comprehensive "specialist" treatments, such as DBT and MBT, are often considered the standard of care, significant training and implementation costs limit the number of mental health professionals providing them, ensuring high quality at the expense of accessibility of care. In addition, once treatment programs are formed, it is difficult to maintain them, with high levels of program attrition (25, 30).

Specialist treatments are not the only avenue to providing care for persons with BPD. A range of alternative treatment options exists, including generalist treatments, abbreviated treatments, psychoeducation interventions, and Web-based interventions. These alternative pathways to care have the potential to bypass the bottleneck created by implementing only gold-standard specialist treatments that are resource intensive. It is hoped that further research evaluating the efficacy of brief treatments and stepped care models will clarify their role in the treatment of BPD and contribute to the formulation of guidelines for BPD treatment that meet demand feasibly and with efficient use of resources. Intensive evidence-based psychotherapies for BPD will continue to serve patients and clinicians with access, interest, willingness, and capacity to engage in them. However, standards of care for BPD must be expanded to meet the realistic needs of all other clinicians who seek to provide good care, as well as the patients who seek it, regardless of where they live.

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REFERENCES

1. Trull TJ, Jahng S, Tomko RL, et al: Revised NESARC personality disorder diagnoses: gender, prevalence, and comorbidity with substance dependence disorders. J Pers Disord 2010; 24:412–426
2. Grant BF, Chou SP, Goldstein RB, et al: Prevalence, correlates, disability, and comorbidity of DSM-IV borderline personality disorder: results from the Wave 2 National Epidemiologic Survey on Alcohol and Related Conditions. J Clin Psychiatry 2008; 69: 533–545
3. Paris J, Zweig-Frank H: A 27-year follow-up of patients with borderline personality disorder. Compr Psychiatry 2001; 42: 482–487
4. Soeteman DI, Verheul R, Busschbach JJ: The burden of disease in personality disorders: diagnosis-specific quality of life. J Pers Disord 2008; 22:259–268
5. Selby EA, McHugh RK: Borderline personality disorder symptoms and treatment seeking over the past 12 months: an investigation using the National Comorbidity Survey–Replication (NCS-R). J Clin Psychiatry 2013; 74:1026–1028
6. Korzekwa MI, Dell PF, Links PS, et al: Estimating the prevalence of borderline personality disorder in psychiatric outpatients using a two-phase procedure. Compr Psychiatry 2008; 49:380–386
7. Zimmerman M, Chelminski I, Young D: The frequency of personality disorders in psychiatric patients. Psychiatr Clin North Am 2008; 31:405–420
8. Soeteman DI, Hakkaart-van Roijen L, Verheul R, et al: The economic burden of personality disorders in mental health care. J Clin Psychiatry 2008; 69:259–265
9. van Asselt AD, Dirksen CD, Arntz A, et al: The cost of borderline personality disorder: societal cost of illness in BPD-patients. Eur Psychiatry 2007; 22:354–361
10. Knight RP: Borderline states. Bull Menninger Clin 1953; 17:1–12
11. Cristea IA, Gentili C, Cotet CD, et al: Efficacy of psychotherapies for borderline personality disorder: a systematic review and meta-analysis. JAMA Psychiatry 2017; 74:319–328
12. Stoffers JM, Völlm BA, Rücker G, et al: Psychological therapies for people with borderline personality disorder. Cochrane Database Syst Rev 2012; 8:CD005652
13. Linehan MM, Armstrong HE, Suarez A, et al: Cognitive-behavioral treatment of chronically parasuicidal borderline patients. Arch Gen Psychiatry 1991; 48:1060–1064
14. Linehan MM, Comtois KA, Murray AM, et al: Two-year randomized controlled trial and follow-up of dialectical behavior

therapy vs therapy by experts for suicidal behaviors and borderline personality disorder. Arch Gen Psychiatry 2006; 63:757–766
15. Bateman A, Fonagy P: Effectiveness of partial hospitalization in the treatment of borderline personality disorder: a randomized controlled trial. Am J Psychiatry 1999; 156:1563–1569
16. Bateman A, Fonagy P: Randomized controlled trial of outpatient mentalization-based treatment versus structured clinical management for borderline personality disorder. Am J Psychiatry 2009; 166:1355–1364
17. Farrell JM, Shaw IA, Webber MA: A schema-focused approach to group psychotherapy for outpatients with borderline personality disorder: a randomized controlled trial. J Behav Ther Exp Psychiatry 2009; 40:317–328
18. Giesen-Bloo J, van Dyck R, Spinhoven P, et al: Outpatient psychotherapy for borderline personality disorder: randomized trial of schema-focused therapy vs transference-focused psychotherapy. Arch Gen Psychiatry 2006; 63:649–658
19. Clarkin JF, Levy KN, Lenzenweger MF, et al: Evaluating three treatments for borderline personality disorder: a multiwave study. Am J Psychiatry 2007; 164:922–928
20. Doering S, Hörz S, Rentrop M, et al: Transference-focused psychotherapy v treatment by community psychotherapists for borderline personality disorder: randomised controlled trial. Br J Psychiatry 2010; 196:389–395
21. Practice guideline for the treatment of patients with borderline personality disorder. Am J Psychiatry 2001; 158(suppl 10):1–52
22. Hermens ML, van Splunteren PT, van den Bosch A, et al: Barriers to implementing the clinical guideline on borderline personality disorder in the Netherlands. Psychiatr Serv 2011; 62:1381–1383
23. Bales DL, Verheul R, Hutsebaut J: Barriers and facilitators to the implementation of mentalization-based treatment (MBT) for borderline personality disorder. Pers Ment Health 2017; 11:118–131
24. King JC, Hibbs R, Saville CWN, et al: The survivability of dialectical behaviour therapy programmes: a mixed methods analysis of barriers and facilitators to implementation within UK healthcare settings. BMC Psychiatry 2018; 18:302
25. Swales MA, Taylor B, Hibbs RAB: Implementing dialectical behaviour therapy: programme survival in routine healthcare settings. J Ment Health 2012; 21:548–555
26. Carmel A, Rose ML, Fruzzetti AE: Barriers and solutions to implementing dialectical behavior therapy in a public behavioral health system. Adm Policy Ment Health Ment Health Serv Res 2014; 41:608–614
27. Landes SJ, Rodriguez AL, Smith BN, et al: Barriers, facilitators, and benefits of implementation of dialectical behavior therapy in routine care: results from a national program evaluation survey in the Veterans Health Administration. Transl Behav Med 2017; 7: 832–844
28. Swenson CR, Torrey WC, Koerner K: Implementing dialectical behavior therapy. Psychiatr Serv 2002; 53:171–178
29. Bales DL, Timman R, Luyten P, et al: Implementation of evidence-based treatments for borderline personality disorder: the impact of organizational changes on treatment outcome of mentalization-based treatment. Pers Ment Health 2017; 11:266–277
30. van den Bosch LM, Sinnaeve R: Dialectical behaviour theory in the Netherlands: implementation and consolidation [in Dutch]. Tijdschr Psychiatr 2015; 57:719–727
31. Ditty MS, Landes SJ, Doyle A, et al: It takes a village: a mixed method analysis of inner setting variables and dialectical behavior therapy implementation. Adm Policy Ment Health Ment Health Serv Res 2015; 42:672–681
32. McMain SF, Links PS, Gnam WH, et al: A randomized trial of dialectical behavior therapy versus general psychiatric management for borderline personality disorder. Am J Psychiatry 2009; 166:1365–1374
33. Worsham C, Jena AB: The art of evidence-based medicine. Harvard Bus Rev (Epub Jan 30, 2019)
34. Mental Health Atlas 2011. Geneva, World Health Organization, 2011. https://www.who.int/mental_health/publications/mental_health_atlas_2011/en/
35. Mental Health Atlas 2014. Geneva, World Health Organization, 2014. https://www.who.int/mental_health/evidence/atlas/mental_health_atlas_2014/en/
36. Mental Health Atlas 2017. Geneva, World Health Organization, 2017. https://www.who.int/mental_health/evidence/atlas/mental_health_atlas_2017/en/
37. World Population Prospects: Key Findings and Advance Tables, 2017 Revision. New York, United Nations, Department of Economic and Social Affairs, Population Division, 2017. https://esa.un.org/unpd/wpp/publications/files/wpp2017_keyfindings.pdf
38. A Quality Manual for MBT. London, Anna Freud National Centre for Children and Families, 2018. https://www.annafreud.org/media/7863/quality-manual-2018.pdf
39. Brazier J, Tumur I, Holmes M, et al: Psychological therapies including dialectical behavior therapy for borderline personality disorder: a systematic review and cost offset analysis of economic evaluation. Health Technol Assess 2006; 10:1–117
40. van Asselt AD, Dirksen CD, Arntz A, et al: Out-patient psychotherapy for borderline personality disorder: cost-effectiveness of schema-focused therapy v transference-focused psychotherapy. Br J Psychiatry 2008; 192:450–457
41. Aviram RB, Brodsky BS, Stanley B: Borderline personality disorder, stigma, and treatment implications. Harv Rev Psychiatry 2006; 14: 249–256
42. Sulzer SH: Does "difficult patient" status contribute to de facto demedicalization? The case of borderline personality disorder. Soc Sci Med 2015; 142:82–89
43. Tusiani-Eng P, Yeomans F: Borderline personality disorder: barriers to borderline personality disorder treatment and opportunities for advocacy. Psychiatr Clin North Am 2018; 41:695–709
44. Baldwin DS, Ajel KI, Garner M: Pharmacological treatment of generalized anxiety disorder. Curr Top Behav Neurosci 2010; 2: 453–467
45. Cuijpers P, Sijbrandij M, Koole S, et al: Psychological treatment of generalized anxiety disorder: a meta-analysis. Clin Psychol Rev 2014; 34:130–140
46. Khan A, Faucett J, Lichtenberg P, et al: A systematic review of comparative efficacy of treatments and controls for depression. PLoS One 2012; 7:e41778
47. Stoffers J, Völlm BA, Rücker G, et al: Pharmacological interventions for borderline personality disorder. Cochrane Database Syst Rev 2010; 6:CD005653
48. Stewart RE, Chambless DL, Baron J: Theoretical and practical barriers to practitioners' willingness to seek training in empirically supported treatments. J Clin Psychol 2012; 68:8–23
49. Bateman AW, Krawitz R: Borderline Personality Disorder: An Evidence-Based Guide for Generalist Mental Health Professionals. Oxford, United Kingdom, Oxford University Press, 2013
50. Gunderson JG, Links PS: Handbook of Good Psychiatric Management for Borderline Personality Disorder. Arlington, VA, American Psychiatric Publishing, 2014
51. Hutsebaut J, Kaasenbrood A: Guideline-Informed Treatment for Personality Disorders: A Treatment Framework for Persons With a Personality Disorder [in Dutch]. Utrecht, Netherlands, Kenniscentrum Persoonlijkheidsstoornissen, 2015. http://kenniscentrumps.nl/sites/default/files/manuals/handleidinggrb-2015.pdf
52. Kramer U, Kolly S, Berthoud L, et al: Effects of motive-oriented therapeutic relationship in a ten-session general psychiatric treatment of borderline personality disorder: a randomized controlled trial. Psychother Psychosom 2014; 83:176–186
53. Blum N, St John D, Pfohl B, et al: Systems Training for Emotional Predictability and Problem Solving (STEPPS) for outpatients with borderline personality disorder: a randomized controlled trial and 1-year follow-up. Am J Psychiatry 2008; 165:468–478

54. McMain SF, Chapman AL, Kuo JR, et al: The effectiveness of 6 versus 12 months of dialectical behaviour therapy for borderline personality disorder: the feasibility of a shorter treatment and evaluating responses (FASTER) trial protocol. BMC Psychiatry 2018; 18:230
55. Stanley B, Brodsky B, Nelson JD, et al: Brief dialectical behavior therapy (DBT-B) for suicidal behavior and non-suicidal self-injury. Arch Suicide Res 2007; 11:337–341
56. Laporte L, Paris J, Bergevin T, et al: Clinical outcomes of a stepped care program for borderline personality disorder. Pers Ment Health 2018; 12:252–264
57. Choi-Kain LW, Albert EB, Gunderson JG: Evidence-based treatments for borderline personality disorder: implementation, integration, and stepped care. Harv Rev Psychiatry 2016; 24:342–356
58. Paris J: Stepped care: an alternative to routine extended treatment for patients with borderline personality disorder. Psychiatr Serv 2013; 64:1035–1037
59. Paris J: Stepped Care for Borderline Personality Disorder: Making Treatment Brief, Effective, and Accessible. New York, Academic Press, 2017
60. Chanen AM, Berk M, Thompson K: Integrating early intervention for borderline personality disorder and mood disorders. Harv Rev Psychiatry 2016; 24:330–341
61. Gelenberg AJ, Freeman MP, Markowitz JC, et al: Practice Guideline for the Treatment of Patients With Major Depressive Disorder, 3rd ed. Washington, DC, American Psychiatric Association, 2010. https://psychiatryonline.org/pb/assets/raw/sitewide/practice_guidelines/guidelines/mdd.pdf
62. Lam RW, Kennedy SH, Parikh SV, et al: Canadian Network for Mood and Anxiety Treatments (CANMAT) 2016 clinical guidelines for the management of adults with major depressive disorder: introduction and methods. Can J Psychiatry 2016; 61:506–509
63. Depression in Adults: Recognition and Management. London, National Institute for Clinical Excellence, 2018. https://www.nice.org.uk/guidance/cg90
64. Grenyer BFS, Lewis KL, Fanaian M, et al: Treatment of personality disorder using a whole of service stepped care approach: a cluster randomized controlled trial. PLoS One 2018; 13:e0206472
65. Andrade LH, Alonso J, Mneimneh Z, et al: Barriers to mental health treatment: results from the WHO World Mental Health surveys. Psychol Med 2014; 44:1303–1317
66. Kohn R, Saxena S, Levav I, et al: The treatment gap in mental health care. Bull World Health Organ 2004; 82:858–866
67. Mack S, Jacobi F, Gerschler A, et al: Self-reported utilization of mental health services in the adult German population—evidence for unmet needs? Results of the DEGS1-Mental Health Module (DEGS1-MH). Int J Methods Psychiatr Res 2014; 23:289–303
68. Zanarini MC, Frankenburg FR: A preliminary, randomized trial of psychoeducation for women with borderline personality disorder. J Pers Disord 2008; 22:284–290
69. Zanarini MC, Conkey LC, Temes CM, et al: Randomized controlled trial of web-based psychoeducation for women with borderline personality disorder. J Clin Psychiatry 2018; 79: 16m11153
70. Bush NE, Smolenski DJ, Denneson LM, et al: A virtual hope box: randomized controlled trial of a smartphone app for emotional regulation and coping with distress. Psychiatr Serv 2017; 68: 330–336
71. Franklin JC, Fox KR, Franklin CR, et al: A brief mobile app reduces nonsuicidal and suicidal self-injury: evidence from three randomized controlled trials. J Consult Clin Psychol 2016; 84: 544–557
72. Prada P, Zamberg I, Bouillault G, et al: EMOTEO: a smartphone application for monitoring and reducing aversive tension in borderline personality disorder patients, a pilot study. Perspect Psychiatr Care 2017; 53:289–298
73. Torous J, Larsen ME, Depp C, et al: Smartphones, sensors, and machine learning to advance real-time prediction and interventions for suicide prevention: a review of current progress and next steps. Curr Psychiatry Rep 2018; 20:51
74. Bonabi H, Müller M, Ajdacic-Gross V, et al: Mental health literacy, attitudes to help seeking, and perceived need as predictors of mental health service use: a longitudinal study. J Nerv Ment Dis 2016; 204:321–324
75. Jorm AF: Mental health literacy: empowering the community to take action for better mental health. Am Psychol 2012; 67:231–243
76. Numbers and Facts in Psychiatry and Psychotherapy [in German]. Berlin, German Society for Psychiatry, Psychotherapy, and Neurology, 2019. https://www.dgppn.de/schwerpunkte/zahlenundfakten.html
77. Coid J, Yang M, Bebbington P, et al: Borderline personality disorder: health service use and social functioning among a national household population. Psychol Med 2009; 39:1721–1731
78. Paris J: Cultural factors in the emergence of borderline pathology. Psychiatry 1996; 59:185–192
79. Paris J: Personality disorders in sociocultural perspective. J Pers Disord 1998; 12:289–301
80. Gupta S, Mattoo SK: Personality disorders: prevalence and demography at a psychiatric outpatient in North India. Int J Soc Psychiatry 2012; 58:146–152
81. Dereboy C, Güzel HS, Dereboy F, et al: Personality disorders in a community sample in Turkey: prevalence, associated risk factors, temperament and character dimensions. Int J Soc Psychiatry 2014; 60:139–147
82. Perseius KI, Kåver A, Ekdahl S, et al: Stress and burnout in psychiatric professionals when starting to use dialectical behavioural therapy in the work with young self-harming women showing borderline personality symptoms. J Psychiatr Ment Health Nurs 2007; 14:635–643