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Implementation and Evaluation of Brief Cognitive-Behavioral Therapy in a Mental  
Health Acute Assessment and Treatment Service

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## Abstract

This pilot study evaluated the addition of 1-6 sessions of cognitive-behavioral therapy (CBT) for patients of a mental health acute assessment and treatment team. A pre-post design for 12 months of consecutive referrals used the Health of the Nation Outcome Scale (HONOS), Depression, Anxiety, Stress Scales (DASS), and patient satisfaction. Forty-two patients who attended CBT were compared with 19 patients who were referred but did not attend therapy due to refusal, referral to another service, or loss to follow-up. With a mean of 3.2 sessions, HONOS scores improved by a mean of 1.02 SD in patients who attended CBT and 0.72 SD in non-attenders. DASS results showed a mean reduction of 0.55 SD in symptoms of depression, anxiety and stress in those who attended. Patients' overall satisfaction averaged 4.7/5. Results showed brief CBT was feasible in this setting, with high patient satisfaction and some evidence of improved patient outcomes compared with usual care.

## Implementation and Evaluation of Brief Cognitive-Behavioral Therapy in a Mental Health Acute Assessment and Treatment Service

Efficient, effective use of mental health resources is an ongoing goal.

Cognitive-behavioural therapy (CBT) has proven efficacy and cost-effectiveness for a number of mental health conditions including mood and anxiety disorders (Issakidis, Sanderson, Corry, Andrews, & Lapsley, 2004; McGinn & Sanderson, 2001; Vos, Haby et al., 2005). Considering the costs of treatment and Level 1 evidence, CBT is highly cost-effective for treatment of panic disorder, generalised anxiety disorder, and major depression (Vos, Haby et al., 2005) and is a more cost effective treatment for major depression than drug therapy (Vos, Corry, Haby, Carter, & Andrews, 2005).

Nevertheless, access to evidence-based treatments remains limited. Group therapy (Vos, Haby et al., 2005), bibliotherapy (Vos, Corry et al., 2005), internet-delivered therapy (Christensen, Griffiths, & Jorm, 2004), and programs for improving general practitioners' skills in providing and referring for mental health care (Cockram et al., 2002) are initiatives that are likely to have contributed to increased access to CBT.

Given that patients frequently prefer individual therapy (Dudley, Melvin, Williams, Tonge, & King, 2005), this project examined an alternative approach: provision of brief individual CBT by psychologists in a mental health acute community based team.

Definitions of "brief" therapy vary. Sometimes 16-20 hours is described as brief (Bechdolf et al., 2004; Leonard et al., 1997). Other authors have defined less than 10 sessions as "brief" (Bond & Dryden, 2002) and 1-4 sessions as "very brief" (Quester, 1999) psychotherapy. It has been noted that specific characteristics of CBT facilitate its use as brief therapy, including a focus on specific, measurable, achievable goals and use of structured, empirically supported treatment strategies (McGinn & Sanderson, 2001).

This project used a maximum of six therapy sessions, after initial face-to-face assessment. This was chosen for consistency with guidelines that specified a six week limit for treatment within the acute team. It is also consistent with previous studies that have shown significant improvements within this timeframe for multiple issues and client groups. Individual or group CBT of 2-6 sessions has been associated with significant improvement in comparison to pre-treatment or usual care for panic disorder (Westling & Ost, 1999), amphetamine use (Baker, Boggs, & Lewin, 2001), depression and hopelessness in African American women who were human-immunodeficiency virus (HIV) seropositive and used illicit drugs (Johnson, 2001), anxiety disorders in children (Cobham, 2003), and symptoms of post-traumatic stress following physical injury (Bisson, Shepherd, Joy, Probert, & Newcombe, 2004). These gains were maintained or increased over follow up periods of 6-13 months (Baker et al., 2001; Bisson et al., 2004; Cobham, 2003; Westling & Ost, 1999).

A number of authors have emphasised the need for CBT research to be conducted in usual care settings with mixed populations (McGinn & Sanderson, 2001; Munro, Baker, & Playle, 2005; Nathan, Stuart, & Dolan, 2000) and not only in research settings. One review found that effect sizes for CBT were only about 10% smaller in usual care settings compared with research trials (McGinn & Sanderson, 2001). The need for brief therapy in community mental health centres has been noted (Mlecko, 1997). However, there is limited literature on the efficacy of individual CBT in the acute community psychiatric setting.

The context for this study was a change in procedures in the intake team of a public mental health service. The Inner North Brisbane Mental Health Service is funded for a catchment area of 260,000 people and is the busiest acute mental health service in the state. The catchment area has a large homeless population, 2,260 hostel/boarding house beds, and three large homeless shelters. The service's "acute care

team” comprises medical, nursing, and allied health staff who provide assessment and short-term treatment for mental health issues. Patients managed within the team are undergoing assessment, have had recent inpatient or crisis presentation, are waiting for follow up appointments in the public or private sector, or have issues which are likely to resolve within a short time frame. The aim for acute treatment is for problems to be resolved or alternate ongoing care arranged within six weeks. Within this ongoing program, CBT intervention by psychologists in the team was implemented in 2004. This article evaluates the first 12 months of the CBT component.

### Methods

#### Participants

Participants were 42 patients who attended one or more therapy appointments with an acute care team psychologist at Inner North Brisbane Mental Health Service in 2004. The 18 male and 24 female patients were aged 18-63 years ( $M = 34.7$ ,  $SD = 13.3$  years). Inclusion criteria for referral were residence in the service’s catchment area, age 18 years or more, focus of intervention from Axis I of the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR; American Psychiatric Association, 2000), and willingness to attend CBT at scheduled clinic times. Priority was given to patients who had experienced onset or significant exacerbation of symptoms within the past three months. Exclusion criteria were current psychotic symptoms, DSM-IV-TR Axis II condition as the focus of intervention, substance use disorder as the focus of intervention, or evidence that engagement into and termination from a short-term therapeutic relationship was likely to be detrimental to the patient.

#### Measures

In accordance with the service’s procedures, standard outcome measures were completed for the first and final face-to-face presentations of patients who attended a minimum of three face-to-face occasions of service. The main outcome measure for

this study was the Health of the Nations Outcome Scale (Wing et al., 1998). This instrument measures clinician ratings on 12 items concerning behaviour, impairment, symptoms, and social functioning. Cronbach's alpha for the total HONOS score has been reported as 0.89 (Eagar, Trauer, & Mellsop, 2005). This measure has demonstrated sensitivity to change in patients of mental health services (Gallagher & Teesson, 2000) although concerns remain about interrater reliability (reported as 0.38 for the total score; Brooks, 2000) and low to moderate correlations with psychometrically sound measures such as the Brief Psychiatric Rating Scale, Symptom Check List-90 Revised, and Social Adjustment Scale (Adams, Palmer, O'Brien, & Crook, 2000).

In addition, referral outcomes for CBT were tracked via Excel spreadsheet. After August 2004, two additional patient-completed measures were used when possible: the 21-item Depression, Anxiety, Stress Scales measure (DASS-21, first and final psychology sessions; Lovibond & Lovibond, 1995), and a brief patient satisfaction measure developed by the first author (final psychology session; see Appendix). The total score on the DASS-21 was doubled, as this is a short form of a 42-item instrument and this procedure creates a satisfactory estimate of the full score (Henry & Crawford, 2005). Cronbach's alpha for the total score has been reported as .93 (Henry & Crawford, 2005). The DASS subscales correlate highly with other validated measures such as the Beck Depression and Anxiety Inventories (Lovibond & Lovibond, 1995). Confirmatory factor analysis has shown distinct depression, anxiety and stress factors as well as a general distress factor representing significant shared variance among the factors (Henry & Crawford, 2005). As the participants' individual clinical issues were likely to show different patterns of scores across the three DASS-21 subscales, the total DASS-21 score (doubled) was used as a self-report measure of distress.

## Procedure

Referrals were made within the team following a semi-structured assessment by one or more mental health clinicians (nursing, allied health, or medical staff).

Therapists were two fully registered psychologists and one conditionally registered psychologist completing postgraduate training. Due to other work duties, the maximum patient contact available was 3 hours per week for the fully registered psychologists and 6 hours per week for the probationary psychologist (the latter from September 2004 onwards). Therapy took place over 1-6 one-hour sessions in individually tailored cognitive-behavioural treatment. Examples of therapy components included psychoeducation, goal-setting, problem-solving, review of coping strategies, breathing retraining, relaxation training, teaching a cognitive model of emotions, challenging unhelpful thoughts, and implementation of sleep hygiene principles. All therapists were trained in CBT in postgraduate university programs accredited by the Australian Psychological Society and received ongoing clinical supervision to ensure treatment fidelity.

Patients also received usual care from the acute care team, including 24-hour availability of telephone and face-to-face assessment and intervention, treatment by a psychiatric registrar if indicated, and monitoring of progress in multidisciplinary team meetings on a twice-weekly basis. Evaluation data were recorded contemporaneously and supplemented by retrospective chart review if there were missing data. This project evaluated patients who were referred in the calendar year of 2004, and followed them until they were discharged from the team.

## Results

### Referral Outcomes

Of 61 referrals, 42 patients attended CBT. The psychologists declined six referrals. Five of these six patients showed indications for longer-term treatment so

they were referred on, to case management (3), private treatment (1) or health psychology (1). One patient was re-referred to a general practitioner as no mental health issue was identified. Patients declined 13 referrals. Three of these patients explicitly declined psychological treatment and ten did not attend or were lost to follow up before being seen by the psychologist. Referred patients who did not attend did not differ significantly in age ( $M = 32.1$ ,  $SD = 9.1$  years,  $t [59] < 1.0$ ) or sex (9 male, 10 female,  $\chi^2 [1] < 1.0$ ) from patients who attended CBT.

### Therapy Characteristics

Waiting time between the referral and the first session attended was 1-35 days ( $M = 12.3$ ,  $SD = 7.7$  days) and was 21 days or less for 95% of clients. Patients attended 1-6 sessions ( $M = 3.2$ ,  $SD = 2.1$  sessions). The number of sessions attended could not be verified for three patients because their medical records were unavailable at the review period. Of the remaining 39 patients, the number who attended each number of sessions is shown in Table 1.

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Insert Table 1 about here

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### Diagnoses

Principal diagnoses, grouped according to the International Classification of Diseases, 10<sup>th</sup> edition (ICD-10; World Health Organization, 2003), are shown in Table 2. The largest diagnostic group was neurotic, stress-related and somatoform disorders which accounted for 35.7% of patients seen. A further 26.2% of patients were from the mood disorder category. However, 33.3% of patients seen were from non-prioritised diagnostic categories, including disorders of adult personality and behaviour; mental and behavioural disorders due to psychoactive substance use; and schizophrenia, schizotypal, and delusional disorders.

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Insert Table 2 about here

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## Patient Outcomes

### *HONOS*

HONOS totals were calculated, with missing ratings replaced by the mean of valid ratings if a minimum of half the ratings were valid. Six HONOS totals were prorated in this way; 3 pre-therapy and 3 post-therapy totals (no patient had his or her score prorated at both time points). Of the 42 patients who attended at least one CBT session, 31 had pre- and post-therapy data on the HONOS, 8 had pre-therapy data only, and 3 had no HONOS recorded. For those with pre and post data, the average pre-therapy total HONOS score was 13.5 (SD = 4.2, range 6-24) with a post-therapy mean of 9.1 (SD = 4.6, range 2-19). Using the pooled pre-therapy standard deviation for attenders and non-attenders of CBT, this represents an improvement of 1.02 standard deviations. For those with pre-therapy data only, the average score was 15.1 (SD = 7.0, range 3-25). Pre- and post-treatment scores were also available for 6 patients who had been referred for CBT but declined or were not accepted for therapy. These patients had a mean pre-treatment score of 14.8 (SD = 4.4, range 9-19). The mean post-treatment score of 11.7 (SD = 6.4, range 6-24) represents a mean improvement of 0.72 standard deviations.

A 2 (attended, not attended) x 2 (pre, post) ANOVA on HONOS totals showed that the decrease in scores at post-treatment was statistically significant,  $F(1, 35) = 8.82, p < .005, \eta_p^2 = .201$ . There was no significant effect for group,  $F(1, 35) = 1.34, ns$ , or the Group x Time interaction ( $F < 1$ ). However, since there were data for only 6 patients who did not attend CBT, it is not surprising that the between group comparisons did not reach statistical significance.

### *DASS-21*

The Depression, Anxiety, Stress Scales (DASS-21) were completed pre- and post-treatment by 10 patients. Before treatment, the mean total score was 63.0 (SD =

27.5, range 22-114). After treatment, the mean score was 47.8 ( $SD = 26.8$ , range 22-96). A repeated measures t-test showed that this trend approached statistical significance,  $t(9) = 1.94$ ,  $p = .084$ ,  $\eta_p^2 = .295$ . The trend was associated with 0.55 SD reduction in self-reported symptoms based on the pre-treatment standard deviation. For comparison, seven patients completed the DASS-21 in the first session only. This was because they either attended only one session (4 patients) or the instrument was not completed at the end of therapy (3 patients). These pre-therapy scores were similar to patients who completed pre-and post- measures: mean of 62.0 ( $SD = 22.1$ , range 30-86).

#### *HONOS and DASS Compared*

There were 8 patients who had pre- and post-data for both instruments. Six patients improved on both DASS and HONOS. One patient showed a 28-point (=1.02 SD) worsening on DASS but a one-point (=0.23 SD) improvement on HONOS. This patient did not complete the DASS-21 immediately after treatment but several weeks later, and she wrote on the questionnaire that the score was unusually elevated that day. She had already been given options for accessing further longer-term therapy. One patient had an 8-point (=0.29 SD) improvement on DASS but a one-point (0.23 SD) decline on HONOS.

#### *Re-Presentations*

Data were examined for patient re-presentations to the service after being closed to the acute care team. These figures for re-presentations up to 1 May 2005 were very similar for patients referred to CBT whether they attended CBT or not. Among patients who received 1-6 psychology sessions, 35 (83.3%) made no further contact by 1 May 2005, 3 (7.1%) made further phone or written contact but were not assessed face-to-face, and 4 (9.5%) attended for further face-to-face assessment. Of the patients who were referred but did not attend CBT, the corresponding figures were 16 (84.2%), 2

(10.5%), and 1 (5.3%). These data show no systematic difference after CBT in whether patients re-attended the service.

### *Patient Satisfaction*

Thirteen patients completed satisfaction surveys (see Appendix). Each item was rated 1-5 with 3 as the neutral point of the scale. Patients reported a high level of satisfaction with CBT ( $M = 4.7$ ,  $SD = 0.5$ ). They rated improvement of their presenting issues as a mean of 4.2 ( $SD = 0.7$ ). On the question of whether they would recommend the service to a friend with similar problems, patients rated this a mean of 4.5 ( $SD = 0.5$ ).

Eight patients added written comments to the survey. The only criticism was that three patients felt six sessions were not sufficient for their needs. Patients gave positive feedback on a number of aspects of treatment. Their comments included: “Reference material ... was very worthwhile”; “Good to receive contact numbers for continued treatment and advice”; “Helpful strategies, comfortable environment”; “You are doing such good work”; “Found psychologist to be friendly, caring and non judgmental. Interested, professional and helped considerably”; “My psychiatrist...and my psychologist...were marvellous. They were extremely supportive and professional.”

### Discussion

Brief CBT was implemented with fair patient outcomes and high patient satisfaction. Patients showed a mean reduction of 0.55 SD in self-reported symptoms of depression, anxiety, and stress, and a mean reduction of 1.02 SD in the HONOS score which is a more general measure of mental health outcomes. There was some evidence of improved outcomes for patients who received CBT compared with those who were referred for CBT but did not attend (1.02 versus 0.72 SD reduction in HONOS respectively). The overall improvement in HONOS scores was statistically significant

but there was insufficient power to show whether there was additional benefit from attending CBT.

It should be noted that this was a highly distressed sample. Patients were similar in mean age (35.0 versus 35.7 years in comparison study) and proportion of females (57 versus 60%) when compared with a British psychotherapy outcomes study that used the HONOS in 1,688 patients (Audin, Margison, Clark, & Barkham, 2001). However, the current sample had higher pre-therapy mean HONOS scores (13.5 compared with 8.9 in the British study). A study of 700 community mental health patients in Scotland reported a mean HONOS of 11.3 (SD 5.7) at presentation and 8.5 (SD 5.2) after several months (Hunter et al., 2004). In New Zealand mental health, examination of 19,000 episodes of care relating to more than 12,500 individual patients showed a mean HONOS of approximately 9.5 for people treated in the community for mood and anxiety disorders but approximately 15.5 for people treated for substance misuse or personality disorders in the community (Eagar et al., 2005). The high scores in the current study may in part reflect inclusion of patients with personality disorders and substance use disorders but this cannot fully account for the high totals which suggest significant psychopathology at study entry. This may also partly reflect the nature of patients in an inner city catchment. Thus, the gains seen cannot be attributed to these being unusually well functioning patients – indeed, they were on average more symptomatic than patients in the British psychotherapy study.

A positive feature of this study was inclusion of a patient rated as well as a clinician rated measure. Unfortunately, the patient rated measure was available only for a subsample, due to introduction later in the study and conduct of the evaluation under usual care rather than research conditions. Nevertheless, it is helpful to have a patient rated measure as there are concerns that clinicians can have subtle and frequently unconscious biases in rating outcomes, such that clinician ratings are likely to show

more favourable outcomes (Bilsker & Goldner, 2002). Thus, the substantial agreement between DASS and HONOS ratings in this study was helpful in checking that improvements were reliable and not due solely to rater bias. Similarly, DASS scores were also congruent with HONOS in showing that this was a highly distressed sample. In a non-clinical sample, the DASS-21 total score doubled had a mean of 18.9 and standard deviation of 19.3 (Henry & Crawford, 2005), compared with a pre-treatment mean of 63.0 in the current study. For this study, the group mean was 2.3 standard deviations higher than normal mean pre-treatment, decreasing to 1.5 standard deviations higher than normal post-treatment. This represents a clinically significant improvement (Jacobson & Truax, 1991).

Improved outcomes within what is considered a brief time for psychotherapy is consistent with studies previously outlined in the introduction (Baker et al., 2001; Bisson et al., 2004; Cobham, 2003; Westling & Ost, 1999). This does not mean that these patients would not have benefited from longer therapy. Both mean HONOS and DASS-21 scores remained significantly elevated for the group as a whole at the completion of therapy. Three of 13 patients who returned patient satisfaction surveys stated that therapy was too brief. This occurred despite the fact that risks and benefits of short-term therapy were discussed in advance, patients were informed how to access longer term therapies, and all patients were given the option of commencing longer term therapy as a first-line measure. Thus, it is important to check patients' understanding that this is brief therapy. However, overall high patient satisfaction was encouraging. No patient reported adverse effects of therapy or strong dissatisfaction. A number of positive comments were offered and patients reported that they would be highly likely to refer a friend with a similar problem to this service.

Other studies that have considered acceptability by patients suggest some reasons for high patient satisfaction. For example, adolescents being treated for

depression had higher satisfaction ratings for treatment with CBT or CBT plus sertraline than with sertraline alone (Dudley et al., 2005). The majority of adolescents with depression rated individual counselling as their preferred treatment, ahead of medication, group therapy, or family therapy (Dudley et al., 2005). The time-limited nature of therapy may also have assisted satisfaction for some patients. A previous study using psychodynamic therapy reported that clients who had a specific number of contracted sessions (8-16) had about half the dropout rate compared with either brief (3-4 months) or open-ended (6-24 months) psychotherapy (30% versus approximately 60% in the other groups; Sledge, Moras, Hartley, & Levine, 1990). These authors suggested that the structured framework could help to reduce client anxiety about therapeutic relationship issues (Sledge et al., 1990).

Therapy was timely, with 95% of first sessions occurring within 3 weeks of referral. Almost all waiting times longer than 1-2 weeks were due to patients rescheduling or failing to attend initial appointments. The service was underutilised due to insufficient referrals from the acute care team. The number of hours of therapy used was 130, whereas the number of available hours was approximately 350. Some of these hours remained unused due to patients cancelling or failing to attend appointments; however, it is clear that significant capacity remained for the psychologists to see additional patients. This finding, in conjunction with the outcome and satisfaction data, helps demonstrate the feasibility of this approach to acute community mental health treatment. The relatively low utilisation of the service in its first 12 months emphasises the importance of informing internal referrers of the service and its referral priorities.

Although referral priorities were specified as acute trauma, mood, or anxiety disorders, a substantial minority of patients seen (33.3%) had a primary diagnosis of personality disorder, psychosis, or substance use disorder. The reason for not prioritising these groups was due to literature that suggests that patients with personality

disorder or psychosis are less likely to benefit from brief interventions due to a higher probability of difficulties with establishing, maintaining, and disengaging from a therapeutic relationship (Grazebrook et al., 2004; Hoglend, 1996). However, patients with either personality disorder or substance use issues as a primary diagnosis showed high rates of accepting brief therapy if it was offered (see Table 2). Sometimes this was specified in advance as a single session intended to discuss coping strategies and treatments and to increase patients' motivation for treatment. Other patients in these diagnostic groups attended CBT of up to 6 sessions. It would be interesting to further explore the appropriateness and effectiveness of brief therapy for these groups, as numbers were too small in the present study for subgroup analysis.

A number of limitations of this study are acknowledged. Results must be interpreted with caution as the data are incomplete and were gathered from a relatively small number of patients. This problem was particularly apparent for the DASS-21 and patient satisfaction as these measures were introduced only in the final 5 months of the project. Groups were not randomly assigned. Also, there were no follow up data on standardised measures; the only follow up data recorded were for re-presentations to the service. Collection of HONOS data in clinical services has been incomplete for other published work: for example, the British study referred to earlier had pre- and post-therapy data for only 31% of patients who commenced therapy (Audin et al., 2001). In a New Zealand study, 95% of adult patients had at least one HONOS completed during treatment but only 58% had both beginning and end of episode measures (Eagar et al., 2005). It should also be noted that legitimate concerns remain about HONOS in terms of inter-rater reliability, poor correlations with other measures of psychiatric symptoms and social functions, sensitivity to change over time, and acceptability (Adams et al., 2000; Brooks, 2000; Hunter et al., 2004). For these reasons, although HONOS was

helpful for demonstrating changes at group level in this study, it would not be recommended to rely solely on HONOS as a psychotherapy outcome measure.

### Conclusions

Overall, the project demonstrated that provision of brief CBT in a community mental health acute care team was feasible, with high patient satisfaction and some evidence of improved outcomes compared with usual care. No change occurred in re-presentations to the service. This pilot study should be interpreted with caution given non-random assignment to groups and missing data. Nevertheless, given the recent expansion of publicly funded time-limited CBT treatments in Australia, these data may help in building the picture of how patients may respond to these forms of treatment.



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Appendix - Patient Satisfaction Survey

This form is for patients of the Acute Care Team Psychology service. Your opinion will help us improve this service. Please circle one answer for each question.

1. How satisfied are you with the treatment you received from your psychologist?

Strongly dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
1	2	3	4	5

2. To what extent have your mental health problems changed since the treatment with the psychologist?

Got a lot worse	Got a little worse	No change	Improved a little	Improved a lot
1	2	3	4	5

3. If you had a friend with a similar problem, how likely is it that you would recommend they attend this service?

Very unlikely	Unlikely	Neither likely nor unlikely	Likely	Very likely
1	2	3	4	5

If you would like to add any other comments or suggestions, please write them in the space below.

Table 1.

Length of Therapy

Total sessions	Number of patients	Percentage
1	14	35.9
2	6	15.4
3	1	2.6
4	5	12.8
5	4	10.3
6	9	23.1
Missing	3	7.7

Table 2.

Principal Diagnosis Categories for Patients Who Attended or Did Not Attend CognitiveBehavioral Therapy

ICD-10 Group	Attended <u>N</u> (%)	Did Not Attend <u>N</u> (%)
Neurotic, stress-related and somatoform disorders (F40-F48)	15 (35.7)	9 (47.4)
Mood [affective] disorders (F30-F39)	11 (26.2)	7 (36.8)
Disorders of adult personality and behaviour (F60-F69)	9 (21.4)	1 ( 5.3)
Mental and behavioral disorders due to psychoactive substance use (F10-F19)	3 ( 7.1)	1 ( 5.3)
Schizophrenia, schizotypal and delusional disorders (F20-F29)	2 ( 4.8)	0 ( 0.0)
Behavioral syndromes associated with physiological disturbances and physical factors (F50-F59)	1 ( 2.4)	0 ( 0.0)
Factors influencing health status and contact with health services (Z codes)	1 ( 2.4)	1 ( 5.3)