The role of personality disorder in 'difficult to reach' patients with depression: findings from the ODIN study

Authors

Brendan D. Kelly[a]*, Patricia Casey[a], Graham Dunn[b], Jose Luis Ayuso-Mateos[c], Christopher Dowrick[d]

[a] Department of Adult, Psychiatry, University College Dublin, Mater Misericordiae University Hospital, 62/63 Eccles Street, Dublin 7, Ireland

[b] Biostatistics Group, Division of Epidemiology and Health Sciences, University of Manchester, Manchester, UK

[c] Department of Psychiatry, Universadid Autónoma de Madrid, Spain

[d] Department of Primary Care, University of Liverpool, Liverpool, UK

*** Corresponding author.**

E-mail address: brendankelly35@gmail.com

Abstract

Individuals with personality disorders (especially paranoid personality disorder) tend to be reluctant to engage in treatment. This paper aimed to elucidate the role of personality disorder in predicting engagement with psychological treatment for depression. The Outcomes of Depression International Network (ODIN) involves six urban and three rural study sites throughout Europe at which cases of depression were identified through a two-stage community survey. One patient in seven who was offered psychological treatment for depression had a comorbid diagnosis of personality disorder (most commonly paranoid personality disorder). Forty-five percent of patients who were offered psychological treatment for depression did not complete treatment. The odds of completion were higher for patients with a comorbid diagnosis of personality disorder, especially paranoid, anxious or dependent personality disorder. The relatively low number of cases with some specific personality disorders (e.g. schizoid personality disorder) limited the study's power to reach conclusions about these specific disorders. This study focused on a community-based sample which may lead to apparently lower rates of engagement when compared to studies based on treatment-seeking populations. Episodes of depression in the context of personality disorder may represent a valuable opportunity to engage with patients who might otherwise resist engagement.

Keywords: Personality disorder; depression; treatment.

1. Introduction

In 2001 the World Health Organization estimated that unipolar depression was the leading cause of years lived with disability in both sexes, at all ages, worldwide [20]. Despite the personal, social and economic consequences of depression, many depressed people do not receive the interventions they need [9, 14]. Moreover, even when treatment is offered, engagement with treatment is often suboptimal, with up to 33% of patients discontinuing antidepressant medication within the first month [11] and up to 44% discontinuing treatment within three months [13]

Individuals with personality disorders, especially paranoid and schizoid personality disorders, tend to be particularly difficult to engage with treatment [19]. This paper aims to examine the characteristics of 'difficult to reach' patients with depression in order to identify predictors of engagement with psychological treatment for depression and, in particular, to clarify the role of personality disorder in predicting engagement with psychological treatment for depression.

2 Methods

2.1 Recruitment and diagnosis

The Outcomes of Depression International Network (ODIN) is a European project studying the prevalence and outcomes of depression in rural and urban communities [7].

Details of the ODIN study methodology have been published elsewhere [2, 7]. The ODIN network involves six urban and three rural study sites in Finland, Republic of Ireland, Norway, Spain and the United Kingdom, at which cases of depression were identified through a two-stage community survey, based on census registers and lists of patients registered with primary care doctors, between 1996 and 1998 [7, 15]. We used the Beck Depression Inventory to screen potential cases [3], followed by a standardized diagnostic interview, including the Schedule for Clinical Assessment in Neuropsychiatry (SCAN, version 2.0) [21] to assign caseness according to the Diagnostic and Statistical Manual of Mental Disorder, fourth edition [1] or the International Classification of Diseases, tenth edition [22]. Personality was also assessed using the Personality Assessment Schedule (PAS) [18]. Disability was assessed using the short form of the MOS General Health Survey (SF-36) [17]; this includes ratings of physical functioning, physical role limitation, mental role limitation, social functioning, mental health, energy/vitality, pain, general health perception and change in health. Problem-solving abilities were assessed using the Problem Solving Inventory (PSI) [10]; this is a 35-item questionnaire assessing problem-solving behaviour and attitudes, with higher scores indicating more dysfunctional problem-solving behaviour. We also asked patients about life events occurring in the six months prior to participation in the study.

2.2 Intervention groups

As detailed elsewhere [8], cases were randomly assigned to one of three trial groups, receiving either six individual sessions of individual problem-solving treatment, eight

sessions of a group depression prevention course, or treatment as usual (controls). Inclusion criteria were (a) age 18 to 65 years; (b) depressive disorders according to the International Classification of Diseases (tenth edition), dysthymia, or adjustment disorder; (c) depressive disorders according to the Diagnostic and Statistical Manual of Mental Disorder (fourth edition) [1], dysthymia, adjustment disorder, bereavement, or other depressive disorders. Cases with a comorbid psychotic illness, current alcohol or drug related disorder, or major suicide risk were excluded. This paper focuses on those cases who were offered some form of intervention, either individual problem-solving treatment (n=128) or a group depression prevention course (n=108), and excludes those who were randomized to the control group (n=189).

2.3 'Difficult to reach' patients

For the purpose of this analysis, the group of 'difficult to reach' patients includes cases who were offered treatment but refused ('refused'); cases who were offered treatment but did not attend an initial session ('did not attend'); and cases who were offered treatment but did not complete the full course of treatment ('discontinued').

2.4 Statistical analysis

Data were analyzed using the Statistical Package for the Social Sciences, version 11.5 [16]. We used the Pearson Chi-Square test and the Student t-test for uni-variable testing. We used multi-variable, binary logistic regression analysis to examine predictors of

engagement with treatment. To facilitate the generation of odds ratios, level of engagement was recoded into a binary variable, with 'engagement' defined as treatment completion and 'non-engagement' defined as refusal of treatment, failure to attend an initial session, or failure to complete treatment. Possible predictor variables were also recoded into binary form: age was coded as 'less than or equal to mean age (45 years)' and 'greater than mean'; marital status was coded as 'ever married' and 'never married'; employment status was coded as 'employed' or 'not employed' (including unemployed and unemployed owing to disability); accommodation status was coded as 'living in own home' or 'not living in own home' (including living in rented accommodation); symptom score on Beck Depression Inventory was coded 'less than or equal to mean' and 'greater than mean,' using the mean Beck Depression Inventory score for the entire study group (mean score 22.79) as a cut-off point; problem-solving ability was coded 'less than or equal to mean' and 'greater than mean,' using the mean problem-solving ability total score on the Problem Solving Inventory (mean score 62.2) as a cut-off point; personality disorder was coded as 'personality disorder present' or 'no personality disorder present'; and life events in the previous six months were coded as 'one or no life events in the previous six months' and 'more than one life event in the previous six months.' Treatment centre was also included in the regression model as an unordered qualitative variable. For each possible predictor variable, an odds ratio, 95% confidence interval and significance value were calculated.

3. Results

Two-hundred and thirty-six subjects were identified as cases and offered treatment for depression: 78.0% of cases had mild depression; 18.1% had moderate depression; 4.0% had severe depression. Mean symptom score at outset on the Beck Depression Inventory was 22.79 (S.D.=8.32; range 6-49; n=236). Thirty-two cases (13.6%) had a comorbid diagnosis of personality disorder: 12 had paranoid personality disorder; 9 had anxious personality disorder; 6 had dependent personality disorder; 2 had emotionally unstable personality disorder (impulsive type); 1 had anankastic personality disorder; 1 had dissocial personality disorder; and 1 had schizoid personality disorder.

Fifty-two cases (22.0%) refused the offer of treatment; 20 (8.5%) accepted the offer of treatment but did not attend the initial session; 36 (15.3%) attended at least one session but did not complete the full course of treatment; and 128 (54.2%) attended for the full course of treatment. Demographic and socioeconomic characteristics of cases in these four groups are shown in Table 1. There were no significant differences across these groups in terms of marital status (Pearson Chi-Square 10.78, P=0.29), employment status (Pearson Chi-Square 6.65, P=0.67) accommodation (Pearson Chi-Square 7.24, P=0.30) or urban/rural residence (Pearson Chi-Square 0.79, P=0.85). There was a minor difference across groups in terms of gender with 58.4% of female patients and 46.3% of male patients completing treatment (Pearson Chi-Square 7.90, P=0.05).

There was significant variation across groups in terms of age (Pearson Chi-Square 21.75, P=0.001), with patients aged 46 to 65 years significantly more likely to complete treatment than patients aged 18 to 25years. However, when data were arranged into

ordered groups of increasing engagement with treatment (starting with those who refused treatment, followed by those who failed to attend the initial session, followed by those who failed to complete the full course of treatment, followed by those who completed the full course of treatment), the association between increasing age and increasing adherence did not follow a significant linear pattern across groups (linear-by-linear association 2.39, *P*=0.12). There was no significant difference in the mean number of life events experienced over the previous six months in those who completed treatment (*n*=128, mean number of life events 1.37, S.D.=1.58) compared to those who either refused treatment, did not attend or did not complete treatment (*n*=108, mean 1.33, S.D.=1.31; *P*=0.83).

There was no difference in engagement rates across diagnostic groups (overall Pearson Chi-Square 3.80, *P*=0.15). Symptom scores at outset on the Beck Depression Inventory appeared to be highest amongst those who failed to attend the initial course of treatment (mean 26.15, S.D.=8.81) compared to those who discontinued treatment (mean 23.19, S.D.=8.75), those who completed treatment (mean 23.15, S.D.=8.27) and those who refused treatment (mean 20.33, S.D.=7.50); there was, however, no significant linear trend across groups (linear-by-linear association 2.24, *P*=0.13). Moreover, when data were arranged into two groups, one group comprising cases who completed treatment (*n*=128) and one group comprising those either refused treatment, did not attend or did not complete treatment (*n*=108), there was no significant difference between the two groups in terms of symptom scores (mean score 23.15, S.D.=8.27, and mean score 22.36, S.D.=8.40, respectively; *P*=0.47). There were no differences between groups who

refused treatment, did not attend treatment, discontinued treatment or attended treatment in terms of any of the disability scores (including social functioning) or problem-solving abilities scores (comprising problem-solving confidence and approach-avoidance sub-scores) at baseline ($P>0.05$ on Pearson Chi Square testing in all cases; Table 2).

Rates of refusal, non-attendance and treatment non-completion were significantly higher amongst cases assigned to the group depression prevention course than those assigned to individual problem-solving treatment (overall Pearson Chi-Square 14.15, $P=0.003$), despite similar symptom scores on the Beck Depression Inventory in both treatment groups (mean score 22.41, S.D.=9.08, and mean score 23.11, S.D.=7.65, respectively; $P=0.52$).

Rates of treatment completion varied between study centres: for individual problem-solving treatment, urban Finland recorded the highest rate of completion (73.9%) and urban United Kingdom recorded the lowest rate (40.4%); while for the group depression prevention course, urban Norway recorded the highest rate of completion (52.4%) and rural Ireland recorded the lowest rate (37.5%; Table 3).

Cases with personality disorder were more likely to complete treatment than those without personality disorder: 23 cases with personality disorder (71.9% of those with personality disorder) completed treatment and 105 without personality disorder (51.5% of those without personality disorder) completed treatment (Pearson Chi-square 4.64,

P=0.03). In particular, the majorities of those with paranoid personality disorder, anxious personality disorder and dependent personality disorder completed treatment (Table 4).

Binary logistic regression analysis of the predictors of engagement (defined as completion of treatment) indicated that the odds of engagement with treatment were higher in patients with personality disorder compared to patients without personality disorder (odds ratio 2.69, 95% CI 1.05 – 6.90), after controlling for age, gender, marital status, employment status, accommodation status, urban/rural residence, symptom score, Beck Depression Inventory score, problem-solving ability, life events in the previous six months, treatment centre, and type of intervention offered (Table 5). Being offered individual problem-solving treatment, as opposed to a group depression prevention course, was also associated with increased odds of engagement (odds ratio 5.47, 95% CI 1.15 – 25.95).

4. Discussion

In this study, 13.6% of cases offered treatment for depression had a comorbid diagnosis of personality disorder (most commonly paranoid personality disorder). Casey et al [4] have previously reported a 22% prevalence of personality disorder in a sample of 302 individuals from the ODIN programme who had single or recurrent depressive episodes, bipolar or persistent mood disorders, or adjustment disorder with depressive features. The present analysis differs from that of Casey et al [4] by including individuals with diagnoses of depressive disorders, dysthymia, adjustment disorder, bereavement or other

depressive disorders. In addition, the present analysis focuses only on individuals who were offered treatment (n=236) and excludes those assigned to the control group, in order to better examine the effects of personality disorder on engagement with treatment; the analysis by Casey et al [4], in contrast, included individuals assigned to the control group. As participants were assigned to treatment or control groups in a random fashion, the differing prevalence of personality disorder in these two analyses can be attributed to (a) chance allocation of a disproportionately low number of individuals with personality disorder to treatment groups during the randomization process, and/or (b) the differing diagnostic profiles of participants in the two analyses.

We found that 45% of those who were offered treatment for depression proved 'difficult to reach', with almost half of this group refusing the offer of treatment, and the remainder either failing to attend the initial session of treatment or failing to complete the full course of treatment. Those who were 'difficult to reach' did not differ from those who completed treatment in terms of marital status, employment status, accommodation, urban/rural residence, number of recent life-events, disability scores or problem-solving abilities scores. Overall, the odds of engagement with treatment were higher for those with a comorbid diagnosis of personality disorder; in particular, the majorities of cases with paranoid personality disorder, anxious personality disorder, dependent personality disorder and emotionally unstable personality disorder (impulsive type) completed treatment.

The strengths of this paper include the recruitment of subjects in both urban and rural settings through a two-stage community survey, based on census registers and lists of patients registered with primary care doctors – methods which have equal validity in terms of the reliability of the data-sets [15]; the international, multi-centre structure of the ODIN study [7]; and the use of recognized, validated tools to assess depressive symptoms [3], diagnosis [1, 21, 22], disability [17] and problem-solving abilities [10]. Subjects with depression were randomly assigned to the three trial groups (individual problem-solving treatment, group depression prevention course, or no intervention), to optimize comparability across groups.

The limitations of this paper include the relatively low number of cases with personality disorder (n=32), which limited our power to examine the effects of specific personality disorders (e.g. schizoid personality disorder, with n=1) on engagement with treatment for depression. The recruitment methodology (a community-based, two-stage screening process) means that the study sample is not a treatment-seeking population, which may lead to apparently lower rates of engagement when compared to studies based on treatment-seeking populations. In addition, the association between personality disorder and increased likelihood of treatment completion in this study was weakly statistically significant, with a P value of 0.03 on uni-variable testing (without adjustment for multiple testing). While this finding retained its weak statistical significance on multi-variable testing (P=0.04), it remains possible that chance accounts for this association; this finding requires replication in independent samples.

The prevalence of specific personality disorders in our sample of patients with depressive disorders differs from that reported in general community samples. For example, a recent community-based study in Great Britain reported a weighted prevalence of 1.6% (95% CI 0.8-2.9) for cluster A personality disorders (which include paranoid personality disorder) and 1.2% (95% CI 0.7-2.2) for cluster B personality disorders (which include dissocial personality disorder) [6]. Our study, by way of contrast, reports a relatively high prevalence of paranoid personality disorder and a relatively low prevalence of dissocial personality disorder, amongst patients who were offered treatment for depressive disorders. The comparability of prevalence rates across studies may, however, be complicated by the fact that the prevalence rates may vary between countries: Casey et al [4], for example, have already used ODIN data to demonstrate such variation between several European countries, with Spain reporting the highest rate of personality disorder and Great Britain reporting the lowest. This may account, at least in part, for the differing distributions of personality disorder in our study (which included individuals with depressive disorders from five countries) compared to the study by Coid et al [6] (which was based on a community sample from a single country, Great Britain).

Interestingly, the community-based study by Coid et al [6] also found that cluster B personality disorders were particularly associated with affective/anxiety disorders. This finding, again, contrasts with the relatively high prevalence of paranoid personality disorder and relatively low prevalence of dissocial personality disorder reported in our study. While this comparison may, again, be confounded by the effect of the countries in which the studies were performed [4], this inconsistency across studies also serves to

highlight the need for further study of the complex relationships between personality disorder, affective illness and country of origin.

Overall, the results of the present study suggest that individuals with personality disorder may be more likely to complete psychological treatment for depression compared to individuals without personality disorder. Such a finding would be consistent with that of Centorrino et al [5] who studied 896 scheduled outpatient clinic visits at a major psychiatric teaching hospital and found that personality disorder was associated with greater compliance with outpatient visits. Our results contrast, however, with those of certain other groups, including Matas et al [12] who examined 874 referrals to the outpatient psychiatry department of a large teaching hospital and found that noncompliant patients were significantly more likely to be diagnosed with personality disorder or substance abuse.

Tyrer et al [19] outlined a distinction between Type R (treatment rejecting) and Type S (treatment seeking) personality disorders, with paranoid and schizoid personality disorders being significantly more likely to be Type R. They went on to suggest a questionnaire for separating Type R from Type S personality disorders; the questionnaire examines whether or not the individual believes there is something about their personality that needs to be changed, and, if so, whether or not they would be willing to receive such treatment. This distinction between Type R and Type S is, then, focused on the individual's perceived need for treatment *for personality disorder*, and the findings of Tyrer et al [19] indicate that individuals with paranoid and schizoid personality disorders

are less willing to engage with such treatment, compared to those with other personality disorders.

Our study, in contrast, focuses on psychological treatment *for depression* and our findings indicate that individuals with personality disorder (especially paranoid personality disorder) may be *more* likely to engage with such treatment, compared to those without personality disorder. One possible explanation is that individuals with a paranoid mind-set may tend to attribute depression to external rather than internal sources and, as a result, may find treatment for depression more acceptable and less self-stigmatizing. Such an explanation remains speculative, however, and there is a need for independent replication of our findings prior to further speculation on this point.

5. Conclusion

Taken together, these findings suggest that even though individuals with personality disorder (especially paranoid personality disorder) may be reluctant to engage with treatment for personality disorder, they may prove more willing to engage with treatment for depression (if and when they develop depression). This, in turn, suggests that episodes of depression occurring in the context of personality disorder may represent a valuable opportunity for therapeutic teams to engage with patients who might otherwise resist engagement. For such an approach to succeed, treatment programmes would need to focus, in the first instance, on the psychological treatment of depression, but might then widen their remit to address the broader and more enduring issues and

psychopathologies associated with personality disorder. This two-stage approach to intervention, using the episode of depression as an opportunity to optimize engagement, merits further evaluation in this ‘difficult to reach’ and ‘difficult to treat’ group of patients.

Declaration of interest

None. Funding detailed in Acknowledgements.

Acknowledgements

The ODIN project was supported by the EC Biomed 2 Programme (contract no. RDO/18/31), the Spanish Fondo de Investigación Sanitaria (contract no. 96/1978 and 02/10069), the Wales Office of Research and Development (contract no. RC092), the Norwegian Research Council, the Council for Mental Health, the Department of Health and Social Welfare and the Finnish Pensions Institute of Agricultural Entrepreneurs (contract no. 0339).

The ODIN group is composed of academic colleagues and research and administrative staff who have worked on this part of the ODIN project. They include Gail Birkbeck, Trygve Børve, Maura Costello, Pim Cuijpers, Ioana Davies, Nicholas Fenlon, Mette Finne, Fiona Ford, Andres Gomes de Barrio, Claire Hayes, Ann Horgan, Tarja Koffert, Nicola Jones, Lourdes Lasa, Marja Lehtil, Catherine McDonough, Erin Michalak, Christine Murphy, Anna Nevra, Teija Nummelin and Britta Sohlman.

Table 1 Demographic and socioeconomic characteristics of cases offered treatment. Values are numbers (percentages)

Characteristic		**Refused (n=52)**	**Did not attend (n=20)**	**Discontinued (n=36)**	**Attended (n=128)**
Gender	Male	16 (30.8)	9 (45.0)	19 (52.8)	38 (29.7)
	Female	36 (69.2)	11 (55.0)	17 (47.2)	90 (70.3)
Age	18-25	4 (7.7)	4 (20.0)	3 (8.3)	0 (0)
	26-45	19 (36.5)	10 (50.0)	17 (47.2)	57 (44.5)
	45-65	29 (55.8)	6 (30.0)	16 (44.4)	71 (55.5)
Marital status	Single	6 (17.3)	6 (30.0)	8 (22.2)	19 (14.8)
	Married or cohabitating	33 (63.5)	8 (40.0)	17 (47.2)	76 (59.4)
	Separated or divorced	9 (17.3)	4 (20.0)	11 (30.6)	27 (21.1)
	Widowed	1 (1.9)	2 (10.0)	0 (0)	6 (4.7)
Employment status	Employed	24 (46.2)	6 (30.0)	21 (58.3)	64 (50.0)
	Unemployed	4 (7.7)	2 (10)	4 (11.1)	12 (9.4)
	Unemployed (disability)	15 (28.8)	6 (30.0)	6 (16.7)	26 (20.3)
	Other	9 (17.3)	6 (30.0)	5 (13.9)	26 (20.3)
Accommodation	Owner occupied	25 (48.1)	8 (40.0)	16 (44.4)	74 (57.8)
	Rented	24 (46.2)	8 (40.0)	16 (44.4)	42 (32.8)
	Other	3 (5.8)	4 (20.0)	4 (11.1)	12 (9.4)
Location	Urban	32 (61.5)	13 (65.0)	20 (55.6)	73 (57.0)
	Rural	20 (38.5)	7 (35.0)	16 (44.4)	55 (43.0)

Table 2 Mean scores (standard deviations) for disability (including social function) and problem solving skills at baseline

Characteristic		**Refused (n=52)**	**Did not attend (n=20)**	**Discontinued (n=36)**	**Attended (n=128)**
Disability [a]	Physical functioning	69.2 (29.6)	71.2 (32.0)	77.4 (25.8)	71.5 (28.7)
	Physical role limitation	45.9 (42.5)	63.8 (44.0)	64.6 (38.9)	55.6 (41.7)
	Mental role limitation	34.0 (36.3)	33.3 (34.2)	42.6 (39.5)	36.8 (39.0)
	Social functioning	48.3 (30.6)	48.3 (28.0)	54.0 (29.1)	49.9 (28.7)
	Mental health	42.4 (19.6)	42.4 (20.6)	40.6 (16.1)	42.4 (17.5)
	Energy/vitality	25.7 (18.7)	32.7 (21.1)	28.2 (18.1)	32.4 (18.4)
	Pain	53.9 (31.50	60.5 (31.1)	58.3 (26.7)	55.5 (27.9)
	General health perception	51.2 (25.9)	60.5 (21.0)	56.6 (26.9)	50.1 (23.1)
	Change in health	39.3 (26.0)	41.2 (24.7)	44.4 (25.4)	40.4 (23.5)
Problem-solving abilities [b]	Total score	61.3 (22.8)	63.9 (26.1)	64.6 (26.7)	61.7 (20.6)
	Problem-solving confidence	25.0 (11.7)	25.6 (13.2)	27.6 (11.0)	25.5 (10.5)
	Approach-avoidance score	36.2 (14.5)	38.0 (16.0)	37.1 (18.4)	36.6 (13.6)

Notes

[a] Disability was assessed using the short form of the MOS General Health Survey (SF-36) [17].

[b] Problem-solving abilities were assessed using the Problem Solving Inventory (PSI) [10]; higher scores indicate more dysfunctional problem-solving behaviour.

Table 3 Levels of patient engagement with treatment, by country and site. Values are numbers (percentages)

Centre	Country	Site	Treatment	Refused (n=52)	Did not attend (n=20)	Discontinued (n=36)	Attended (n=128)	Total (n=236)
1	Finland	Urban	Problem solving	0 (0)	1 (4.3)	5 (21.7)	17 (73.9)	23 (100.0)
2	Finland	Rural	Problem solving	3 (10.7)	1 (3.6)	4 (14.3)	20 (71.4)	28 (100.0)
3	Ireland	Urban	Depression prevention	0 (0)	2 (28.6)	2 (28.6)	3 (42.9)	7 (100.0)
4	Ireland	Rural	Depression prevention	0 (0)	4 (50.0)	1 (12.5)	3 (37.5)	8 (100.0)
5	Norway	Urban	Depression prevention	15 (35.7)	0 (0)	5 (11.9)	22 (52.4)	42 (100.0)
6	Norway	Rural	Depression prevention	12 (33.3)	2 (5.6)	5 (13.9)	17 (47.2)	36 (100.0)
7	Spain	Urban	Problem solving	7 (36.8)	0 (0)	0 (0)	12 (63.2)	19 (100.0)
8	United Kingdom*	Urban	Problem solving	10 (21.3)	10 (21.3)	8 (17.0)	19 (40.4)	47 (100.0)
9	United Kingdom*	Urban	Problem solving	5 (19.2)	0 (0)	6 (23.1)	15 (57.7)	26 (100.0)

* The study included two separate urban samples in the United Kingdom

Table 4 Treatment completion in cases with personality disorder. Values are numbers (percentages)

Type of personality disorder	**Completed treatment** ***n=23***	**Did not complete treatment** ***n=9***	**Total** ***n=32***
Paranoid	9 (75%)	3 (25%)	12 (100%)
Anxious personality disorder	7 (78%)	2 (22%)	9 (100%)
Dependent	5 (83%)	1 (17%)	6 (100%)
Emotionally unstable (impulsive type)	2 (100%)	-	2 (100%)
Anankastic	-	1 (100%)	1 (100%)
Dissocial	-	1 (100%)	1 (100%)
Schizoid	-	1 (100%)	1 (100%)

Table 5 Binary logistic regression analysis of predictors of engagement

Variable	**Odds ratio**	**95% confidence interval**	**p**
Age > 45 years	1.27	0.68 – 2.36	0.45
Male gender	0.67	0.37 – 1.22	0.19
Never married	0.93	0.42 – 2.09	0.86
Not employed	0.94	0.51 – 1.71	0.84
Does not live in own home	0.58	0.31 – 1.11	0.10
Urban residence	0.88	0.29 – 2.67	0.82
Beck Depression Score greater than mean	1.42	0.79 – 2.53	0.24
Problem-solving ability greater than mean	0.88	0.50 – 1.60	0.66
Personality disorder present	2.69	1.05 – 6.90	0.04
More than one life event in past 6 months	1.45	0.80 – 2.62	0.22
Offered individual intervention	5.47	1.25 – 25.95	0.03

Note:

The odds ratios presented in this table relate to the odds of engagement with treatment (defined as treatment completion). For example, the odds of engagement amongst cases with a personality disorder were 2.69 times the odds of engagement amongst cases without a personality disorder, with a 95% confidence interval of 1.05 to 6.90 and a statistical significance of p= 0.04.

References

[1] American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. 4th ed. Washington, DC: American Psychiatric Press; 1994.

[2] Ayuso-Mateos JL, Vázquez-Barquero J-L, Dowrick C, Lehtinen V, Dalgard OS, Casey P, Wilkinson C, Lasa L, Page H, Dunn G, Wilkinson G, ODIN Group. Depressive disorders in Europe: prevalence figures from the ODIN study. Br J Psychiatry 2001; 179: 308-316.

[3] Beck A, Ward C, Mendelson M, Mock J, Erbaugh J. 1961. An inventory for measuring depression. Arch Gen Psychiatry 1961; 4: 561-571.

[4] Casey P, Birbeck G, McDonagh C, Horgan A, Dowrick C, Dalgard O, Lethinen V, Ayuso-Mateos JL, Dunn G, Page H, Wilkinson C, Wilkinson G, Vazquez-Barquero JL. Personality disorder, depression and functioning: results from the ODIN study. J Affect Disord 2004; 82: 277-283.

[5] Centorrino F, Hernan MA, Drago-Ferrante G, Rendall M, Apicella A, Langar G, Baldessarini RJ. Factors associated with noncompliance with psychiatric outpatient visits. Psychiatr Serv 2001; 52: 378-380.

[6] Coid J, Yang M, Tyrer P, Roberts A, Ullrich. Prevalence and correlates of personality disorder in Great Britain. Br J Psychiatry 2006; 188: 423-431.

[7] Dowrick,C, Casey P, Dalgard O, Hosman C, Lehtinen V, Vázquez-Barquero J-L, Wilkinson G, ODIN Group. Outcome of Depression International Network (ODIN). Br J Psychiatry 1998; 172: 359-363.

[8] Dowrick C, Dunn G, Ayuso-Mateos JL, Dalgard OS, Page H, Lehtinen V, Casey P, Wilkinson C, Vázquez-Barquero J-L, Wilkinson G, Outcome of Depression International Network (ODIN) Group. Problem solving treatment and group psychoeducation for depression: multicentre randomized controlled trial. Br Med J 2000; 321: 1-6.

[9] Goldberg D, Huxley P. Common mental disorders: a biosocial model. London: Routledge, 1992.

[10] Heppner PP, Peterson CH, The development and implications of a personal problem solving inventory. J Counsel Psychol 1982; 29: 66-75.

[11] Maddox JC, Levi M, Thompson C. The compliance with antidepressants in general practice. J Psychopharmacol 1994; 8: 48-53.

[12] Matas M, Staley D, Griffin W. A profile of the noncompliant patient: a thirty-month review of outpatient psychiatry referrals. Gen Hosp Psychiatry 1992; 14: 124-130.

[13] Nemeroff CB. Improving antidepressant adherence. J Clin Psychiatry 2003; 64 (Suppl. 18): 25-30.

[14] Paykel, ES. Priest RG. Recognition and management of depression in general practice: consensus statement. Br Med J 1992; 161: 663-667.

[15] Shanks J, Kheraj S, Fish S. Better ways of assessing health needs in primary care. Br Med J 1995; 310: 480-481.

[16] SPSS Inc. SPSS User Guide Base Statistics 6.1.Chicago: SPSS Inc.; 1994.

[17] Stewart A, Hays R, Ware J. The MOS short-form general health survey: reliability and validity in the patient population. Med Care 1998; 26: 724-732.

[18] Tyrer P, Alexander J. Classification of personality disorder. Br J Psychiatry 1979; 135: 163-167.

[19] Tyrer P, Mitchard S, Methuen C, Ranger M. Treatment rejecting and treatment seeking personality disorders: Type R and Type S. J Personal Disord 2003; 17: 263-268.

[20] World Health Organization. The World Health Report 2001: Mental Health: New Understanding New Hope. Geneva: World Health Organization; 2001.

[21] World Health Organization. Schedule for clinical assessment in neuropsychiatry: version 2.0. Geneva: World Health Organization (Division of Mental Health); 1994.

[22] World Health Organization. The ICD-10 Classification of Mental and Behavioural Disorders. Geneva: World Health Organization; 1994.