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Impact of severity of personality disorder on the outcome of depression

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Abstract

The influence of severity of personality disorder on outcome of depression is unclear.
Four hundred and ten patients with depression in 9 urban and rural communities in
Finland, Ireland, Norway, Spain and the United Kingdom, were randomised to
individual problem-solving treatment (n=121), group sessions on depression
prevention (n=106) or treatment as usual (n=183). Depressive symptoms were
recorded at baseline, 6 and 12 months. Personality assessment was performed using
the Personality Assessment Schedule and analysed by severity (no personality
disorder, personality difficulty, simple personality disorder, complex personality
disorder). Complete personality assessments were performed on 301 individuals of
whom 49.8% had no personality disorder; 19.3% had personality difficulties; 13.0%
had simple personality disorder; and 17.9% had complex personality disorder.
Severity of personality disorder was correlated with Beck Depression Inventory (BDI)
scores at baseline (Spearman's r=0.21; p<0.001), 6 months (r=0.14; p=0.02) and 12
months (r=0.21; p=0.001). On multi-variable analysis, BDI at baseline (p<0.001) and
type of treatment offered (individual therapy, group therapy, treatment as usual)
(p=0.01) were significant independent predictors of BDI at 6 months. BDI at baseline
was the sole significant independent predictor of BDI at 12 months (p<0.001). There
was no interaction between personality disorder and treatment type for depression.
While multi-variable analyses indicate that depressive symptoms at baseline are the
strongest predictor of depressive symptoms at 6 and 12 months, the strong

correlations between severity of personality disorder and depressive symptoms make it difficult to establish the independent effect of personality disorder on outcome of depression.

1.   Introduction

The effects of personality disorder on the outcome of depression are not clear. Although it was generally believed that personality disorder had a negative effect on the outcome of depression [16], Mulder [11] found that the best designed studies tended to show little difference in outcome between individuals with personality disorder and those without. A more recent meta-analysis, however, reported a doubling of the risk of poor outcome in individuals with personality disorder [14] and, notwithstanding an apparent paucity of randomised controlled trials [13], the latter finding remains significant and relatively robust [15].

There is still, however, a paucity of well-designed, prospective studies that examine the effects of personality disorder on outcome of depression while taking adequate account of factors such as severity of depression at baseline and severity of personality disorder [11]. We used data from the Outcomes of Depression International Network (ODIN) to determine the influence of severity of personality disorder on the outcome of depression, while controlling for a range of factors including severity of depression.

2.   Methods

2.1   Recruitment, screening and diagnosis

ODIN is a multi-centre, collaborative research project that examined the prevalence and outcomes of depression in urban and rural communities in five European

countries: Finland, Ireland, Norway, Spain and the United Kingdom. Details of the ODIN methodology have been published elsewhere [2, 8]. In summary, adults aged between 18 and 64 years were selected from the census register in urban and rural communities and screened for depressive disorder using the Beck Depression Inventory (BDI) [4].

Individuals scoring 13 or above on the BDI were offered a diagnostic interview, using the Schedule for Clinical Assessment in Neuropsychiatry (Version 2) (SCAN) [25]. The ICD-10 [26] diagnoses of interest were single and recurrent depressive episodes (mild, moderate and severe), bipolar and persistent mood disorders, and adjustment disorder with depressive features. All SCAN cases were re-assessed 6 and 12 months after the initial diagnostic interview [7]. Individuals with depression at baseline were randomized into groups offering individual problem-solving treatment, group sessions on the prevention of depression or treatment as usual (i.e. no specific psychological treatment offered but the individual was treated as usual in a primary care setting). We used the BDI to record depressive symptoms at baseline, 6 and 12 months.

2.2   Personality assessment

We assessed personality using the Personality Assessment Schedule (PAS) [21] at 6 months, so as to minimise the possibility of contamination by depressive symptoms. The PAS is a structured interview in which 24 personality traits are rated on a 9-point scale. The PAS classifies individuals into diagnostic groups outlined in ICD-10 [26] and DSM [1], and permits classification into 4 categories of increasing severity: (1) no personality disorder; (2) personality difficulty; (3) simple personality disorder; and

(4) complex personality disorder [22]. Individuals with personality difficulty have sub-threshold scores for personality disorder using ICD or DSM criteria, while individuals with complex personality disorder have personality disorders in two or more clusters.

2.3   *Training and quality assurance*

All interviewers were fully trained in the use of the PAS and SCAN by approved trainers.

2.4   *Statistical analysis*

Data were analyzed using the Statistical Package for the Social Sciences [19]. We used Spearman's *rho* (*r*) to test bi-variable correlations. We used multi-variable, linear regression analysis to examine predictors of BDI scores at 6 and 12 months; proposed predictor variables were gender, age, BDI score at baseline, type of treatment offered and severity of personality disorder. The four categories of severity of personality disorder were used as dummy variables in the analysis. All interaction variables were tested. An alternative approach to analysis might have involved the use of the change in BDI scores over time as the dependent variable. Such an analysis would be less useful for predicting absolute levels of depressive symptoms after 6 and 12 months, but would have the merit of focusing on change in depressive symptoms over time; it is hoped to examine this matter further in future work.

3.   **Results**

Four hundred and ten individuals with depression participated in this study. Mean age

was 44.90 years (range 19-65, SD 10.56) and 267 (65.1%) participants were female.

Participants were randomly allocated to groups receiving individual therapy ($n=121$),

group therapy ($n=106$) or treatment as usual ($n=183$). Mean BDI score at baseline was

22.76 (SD 8.21) and did not differ across groups (Pearson Chi-Square 85.37, $p=0.22$).

Complete personality assessments were performed on 301 individuals of whom 150

(49.8%) had no evidence of personality difficulties; 58 (19.3%) had personality

difficulties; 39 (13.0%) had simple personality disorder; and 54 (17.9%) had complex

personality disorder. Severity of personality disorder was correlated with BDI scores

at baseline (Spearman's $r=0.21$; $p<0.001$), 6 months ($r=0.14$; $p=0.02$) and 12 months

($r=0.21$; $p=0.001$).

Table 1 shows the results of linear regression analysis with BDI score at 6 months as

the outcome variable: BDI at baseline ($p<0.001$) and type of treatment offered

(individual therapy, group therapy or treatment as usual) ($p=0.01$) were significant

independent predictors of BDI at 6 months. Mean BDI score at 6 months in the

individual therapy group (mean 12.42, SD 10.08) was non-significantly lower than

that in the group therapy group (mean 14.46, SD 9.75; Mann-Whitney U 3032.50,

$p=0.08$) and significantly lower than that in the treatment as usual group (mean 15.16;

SD 10.54; Mann-Whitney U 5191.00, $p=0.04$). Table 2 shows the results of linear

regression analysis with BDI score at 12 months as the outcome variable: BDI at

baseline was the sole significant independent predictor of BDI at 12 months

($p<0.001$). No interaction terms were significant predictors of BDI scores at 6 or 12 months ($p>0.05$ in all cases) so these were excluded from the final models.

4. Discussion

4.1 Summary of results

We found that depressive symptoms at baseline are the strongest independent predictor of depressive symptoms at 6 and 12 months. The strong correlations between severity of personality disorder and depressive symptoms make it difficult to establish the independent effect of personality disorder on outcome of depression.

4.2 Strengths and limitations

The strengths of this study include the recruitment of subjects in both urban and rural settings, based on census registers; the international, multi-centre structure of the ODIN study [2, 8]; and the use of recognized, validated tools to assess diagnoses [25, 26], depressive symptoms [4] and severity of personality disorder [21, 22]. In particular, our study examined the effect of the severity of personality disorder in relation to severity of depression at baseline, 6 and 12 months, in order to explore the relationship, if any, between the severities of the two disorders during the course of treatment for depression.

The limitations of this study include the fact that the recruitment methodology (community-based recruitment using census registers) means that the sample was not

drawn from a treatment-seeking population, possibly reducing the study's generalizability to treatment-seeking populations owing, at least in part, to the relatively lower prevalence of personality disorder in this sample compared to treatment-seeking populations. In addition, while our multi-variable analysis took account of certain variables (age, gender, treatment, severities of depression and personality disorder), it did not take account of other variables (e.g. past psychiatric history, duration of current episode, psychosocial functioning). The heterogeneity of patients with depression included in this study (i.e. depression, bipolar disorder, adjustment disorder) may have diluted a demonstrable effect of personality disorder.

We assessed severity of personality disorder 6 months after treatment for depression commenced; while this was done in order to minimise the effect of depressive symptoms on assessment of personality disorder, it would be useful (in a differently designed study) to assess personality disorder prior to both depression occurring and treatment for depression being offered [24]. In terms of methodology, other approaches which merit consideration in future studies include analysing personality disorder as a dimensional variable, and assessing depressive symptoms using instruments other than the BDI, such as the Montgomery Asberg Depression Rating Scale [20]; the reasons underlying the selection of specific methodologies and instruments in the ODIN study are outlined in previous papers [2,6-9].

4.3   Personality disorder and treatment outcome in depression

This study was undertaken in the context of conflicting findings regarding the relationship between personality disorder and outcome of treatment for Axis 1

psychiatric disorders: for example, while is strong evidence that personality disorder is associated with poor prognosis in neurotic disorders [17, 23], the evidence in relation to depression is notably inconsistent [6, 11, 14, 16]. There are several reasons why the relationship between personality disorder and outcome of depression may be particularly difficult to study; specific methodological challenges include the identification of appropriate outcome measures, choosing methods for assessing personality disorder, establishing study time-scales (short-term versus long-term), selecting sample populations and identifying appropriate types of treatment. Moreover, depression may have pre-existing links with specific personality disorders (e.g. cluster C personality disorders, characterised by avoidance and low self-esteem) and, in turn, individuals with depression may tend to report more maladaptive traits compared to when they are in remission.

One of the key strengths of our study is that our analysis takes account of the severities of both depression and personality disorder. To date, most studies in this field have focussed on the simple presence or absence of depression and personality disorder, rather than their severities [11]. Taking account of severity allows a more powerful and nuanced examination of the proposed relationship between the two disorders and, in this context, our data demonstrate that severity of personality disorder does correlate with severity of depressive symptoms following treatment for depression. However, severity of personality disorder also correlates with depressive symptoms at baseline and, on multi-variable analysis, depressive symptoms at baseline emerge as the strongest independent predictor of depressive symptoms at 6 and 12 months.

It is important to note, however, that the strong correlations between severity of personality disorder and depressive symptoms make it difficult to establish the independent effect of personality disorder on outcome of depression through multi-variable modelling. As a result, it remains entirely possible that severity of personality disorder has an independent effect on outcome of depression and that we 'over-controlled' for the effects of personality disorder by including depressive symptoms at baseline (which correlate strongly with severity of personality disorder) in the multi-variable models. In addition, the number of individuals with 'complex personality disorder' in our study was relatively low, further reducing the likelihood of detecting a significant effect if one exists.

While the correlations between severity of personality disorder and depressive symptoms in our data undoubtedly bring added complexity to multi-variable modelling, the strength of these correlations suggests an intimate phenomenological relationship between symptoms of depression and those of personality disorder. This raises the possibility that higher depression scores may be a direct consequence of personality pathology rather than just depression; further longitudinal studies would help clarify this matter.

4.4   Personality disorder and type of treatment for depression

The absence of any significant interaction between personality disorder and treatment type for depression (e.g. individual versus group psychotherapy) is particularly interesting in this study. There is a certain amount of evidence that specific pharmacological interventions (e.g. fluoxetine) may be more helpful than others (e.g.

nortryptiline) in treating depression in individuals with certain types of personality disorder (e.g. cluster B) [12]. There is also evidence that personality disorder may adversely affect treatment of depression with interpersonal therapy but not cognitive-behavioural therapy [10, 18].

With regard to the present study, it should be noted that psychological treatments extended to 6 or 8 sessions, and rates of completion were 63% in problem-solving therapy and 44% in group therapy [9]. Nonetheless, it remains noteworthy that we found no significant interaction between personality disorder and type of psychotherapy used to treat depression; this may relate, at least in part, to the absence of any treatment effect on personality disorder in this group. In this context, the findings would be consistent with broad-based, systematic reviews of psychotherapeutic treatments for personality disorder, which tend to support the overall effectiveness of psychotherapy in the treatment of personality disorder but do not conclusively identify any one type of psychotherapy as more effective than any other [3, 5].

5. Conclusions

Depressive symptoms at baseline are the strongest independent predictor of depressive symptoms at 6 and 12 months. The strong correlations between severity of personality disorder and depressive symptoms make it difficult to establish the independent effect of personality disorder on outcome of depression; further longitudinal studies would help clarify this issue. It would be especially useful if such studies included follow-up periods greater than the 12-month period in this study to

date; follow-up periods of 2, 5 or even 10 years would be particularly valuable contributions to this literature. There is also a need for further study of the effectiveness of specific types of psychotherapy for the treatment of depression in individuals with personality disorder.

Table 1: Linear regression analysis of Beck Depression Inventory scores at 6 months in patients with depression [a]

Variable	β	Standard error	95% Confidence intervals		p
Constant	1.119	4.009	-6.771	9.010	0.780
Gender	-1.469	1.147	-3.727	0.788	0.201
Age	-0.027	0.053	-0.131	0.077	0.609
BDI at baseline [b]	0.573	0.066	0.443	0.703	<0.001
Study group [c]	1.601	0.618	0.384	2.818	0.010
Severity of personality disorder [d]	0.384	0.468	-0.538	1.305	0.413

Notes

[a] Adjusted r^2=22.7%

[b] Beck Depression Inventory Score [4] at baseline

[c] Individuals with depression were randomised into either the individual problem-solving group (*n*=121), group therapy group (*n*=106) or treatment as usual group (*n*=183)

[d] Personality disorder was classified into four categories of increasing severity: (1) no personality disorder; (2) personality difficulty; (3) simple personality disorder; and (4) complex personality disorder [22]

Table 2: Linear regression analysis of Beck Depression Inventory scores at 12 months in patients with depression [a]

Variable	β	Standard error	95% Confidence intervals		p
Constant	2.488	3.954	-5.298	10.274	0.530
Gender	-1.479	1.133	-3.710	0.752	0.193
Age	-0.019	0.052	-0.120	0.083	0.717
BDI at baseline [b]	0.493	0.065	0.365	0.621	<0.001
Study group [c]	0.940	0.614	-0.270	2.150	0.127
Severity of personality disorder [d]	0.760	0.465	-0.156	1.675	0.104

Notes

[a] Adjusted r^2=20.9%

[b] Beck Depression Inventory Score [4] at baseline

[c] Individuals with depression were randomised into either the individual problem-solving group (*n*=121), group therapy group (*n*=106) or treatment as usual group (*n*=183)

[d] Personality disorder was classified into four categories of increasing severity: (1) no personality disorder; (2) personality difficulty; (3) simple personality disorder; and (4) complex personality disorder [22]

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