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BRIEF CLINICAL REPORT

An evaluation of value-based outcomes for women admitted to a dialectical behaviour therapy integrated practice unit: a follow-up study

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Abstract

Background: An earlier evaluation (Fox *et al.*, 2014) highlighted reductions in risk behaviours and restrictive practices for women admitted to low secure dialectical behaviour therapy (DBT) unit. Since then, a value-based healthcare model has been adopted.

Aims: To explore changes in health, social and psychological functioning, risk, quality of life, and in incidents of violence and restrictive practices, over the initial 12-month period of admission to a specialist DBT service.

Method: Data were extracted from electronic clinical records for 41 women with emotionally unstable personality disorder admitted to a specialist integrated practice unit (IPU) providing a comprehensive DBT programme. Secondary analysis was conducted on an anonymous dataset of routinely collected outcome measures at baseline admission, and 6 and 12 months post-admission. ANOVAs and pairwise *post hoc* comparisons, and non-parametric equivalents, were conducted to examine changes in outcomes.

Results: Findings showed statistically significant improvements in mental health scores on the ReQOL ($p<.01$), global, wellbeing, problems, functioning and risk scores on the COREOM (all $p<.01$), and severe disturbance, emotional wellbeing, socioeconomic status, risk and need scores on the HoNOS-Secure (all $p<.05$). Significant reductions in risk behaviours ($p<.01$) and restrictive practices ($p<.01$) were also apparent. The most substantiative improvements were largely demonstrated over a 12-month admission period.

Conclusions: Admission to the DBT IPU yielded significant improvements on outcomes pertaining to quality of life, psychological distress, and risk. Importantly, these are outcomes that aligned with patients' perceptions of recovery.

Keywords: dialectical behaviour therapy (DBT); emotionally unstable personality disorder (EUPD); integrated practice unit (IPU); outcomes; value-based healthcare

Introduction

Emotionally unstable personality disorder (EUPD) is an enduring psychiatric disorder characterised by emotional dysregulation, cognitive distortions, impulsivity and relationship instability. Dialectical behaviour therapy (DBT) equips people with EUPD with skills in managing intense emotions and changing maladaptive coping behaviours.

An earlier service evaluation by Fox *et al.* (2014) explored the effectiveness of a comprehensive DBT programme for 18 women with EUPD, admitted to a specialist low-secure unit. Findings

highlighted significant improvements in patient- and clinician-rated outcomes pertaining to symptomology, social functioning, clinical problems and risk behaviours, primarily within the first 6 months of treatment. Nevertheless, the outcome measures had not been selected for the DBT service specifically and thus may not have been important recovery indicators for those accessing the programme.

Since then, the service has transitioned towards a value-based healthcare model. The importance of systematic patient-centred outcome measurement as an indicator of quality of care is fundamental to a true value-based healthcare system (Porter and Lee, 2013). Thus, as part of this evolution, the outcomes utilised by the DBT IPU were selected through a process of patient consultation. As such, the current study was conducted as a follow-up to the previous evaluation of the DBT service, exploring changes in outcomes which those accessing the service consider to be valuable indicators of recovery, rather than outcomes selected by the service. Additionally, whereas the initial evaluation explored outcomes within a singular specialist rehabilitation ward, the current study assessed outcomes across the DBT integrated practice unit (IPU), a multi-unit secure service providing a progressive care pathway across low secure and specialist rehabilitation wards.

Method

Design

A retrospective within-groups design was employed to evaluate treatment outcomes in women admitted to the DBT IPU between July 2017 and December 2019, over a 12-month admission period. Demographic, clinical and risk data were extracted from electronic records.

Participants and setting

Overall, 101 women were admitted to the DBT IPU. The service, which consisted of one low secure and two specialist rehabilitation units, provides in-patient treatment for women with a diagnosis of EUPD and additional complex mental health needs through a comprehensive DBT programme, as previously described by Fox *et al.* (2014). Of these women, 41 had a complete dataset for at least one outcome and thus were included in the study.

Measures

Scores at admission, 6 months post-admission and 12 months post-admission were extracted for the ReQoL20 (Keetharuth *et al.*, 2017), COREOM (Evans *et al.*, 2000), and HoNOSSecure (Sugarman and Walker, 2007) measures. An alternative HoNOS scoring structure that has been shown to be a better fit for in-patient populations was utilised in the current study (see Maddison *et al.*, 2016). Security scales were also grouped based upon the two-factor structure outlined by Tiffin *et al.*, 2011): those assessing 'risk' and 'need'. The frequency and severity of risk behaviours (self-harm, violence against persons and objects) and the frequency of restrictive practices (restraints, seclusions) was routinely recorded on electronic records. Aggregated aggression scores (AAS) were also calculated to account for type and severity of risk behaviour (see Alderman *et al.*, 2011).

Data analysis

Where the assumption of normality was met, repeated measures ANOVAs and pairwise *post hoc* comparisons were conducted to test for changes in outcomes between time points (baseline *vs* 6 months; 6 months *vs* 12 months; baseline *vs* 12 months). Where the assumption of normality was not met, the Friedman's test and Wilcoxon signed ranks test were instead conducted. The

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Bonferroni correction was applied to adjust for multiple comparisons ($p<.016$). As data were not available on each outcome for the whole sample, the number of patients included in analyses varied between each outcome.

Results

Sample characteristics

Most participants were admitted to a specialist rehabilitation unit ($n = 31$, 75.6%), with the remaining participants residing in a low secure ward ($n = 10$, 24.4%). Participants were most commonly detained under Section 3 of the Mental Health Act ($n = 36$, 87.8%), with the remaining participants detained under forensic sections ($n = 5$, 12.2%). All participants had a primary ($n = 40$, 97.6%) or secondary ($n = 1$, 2.4%) diagnosis of EUPD. Age ranged from 18 to 51 years ($M = 27.56$ years, $SD = 9.25$). Of those who had been discharged ($n = 18$), length of admission ranged from 12 to 28 months, with a mean admission length equivalent to 18 months ($M = 551.36$ days, $SD = 148.15$).

Main effects

ReQoL-20 (n = 22)

Mental health scores improved across admission ($F_{2,42} = 5.42$, $p<.01$, $\eta^2_p = .21$). Scores on the physical health item did not significantly change ($F_{2,42} = 1.53$, $p = .23$].

CORE-OM (n = 16)

There were significant reductions (improvements) across admission on the CORE-OM for global distress ($F_{2,28} = 13.28$, $p<.001$, $\eta^2_p = .47$), wellbeing ($F_{2,30} = 6.64$, $p<.01$, $\eta^2_p = .30$), problems ($F_{2,30} = 10.36$, $p<.001$, $\eta^2_p = .41$), functioning ($F_{2,30} = 11.67$, $p<.001$, $\eta^2_p = .44$), and risk ($F_{2,30} = 10.39$, $p<.001$, $\eta^2_p = .41$) scores.

HoNOS-Secure (n = 36)

There were significant reductions (improvements) across admission on the HoNOS-Secure for severe disturbance [$\chi^2(2) = 19.75$, $p<.001$], emotional wellbeing [$\chi^2(2) = 8.96$, $p<.05$], socioeconomic status [$\chi^2(2) = 7.72$, $p<.05$], risk [$\chi^2(2) = 17.40$, $p<.001$] and need [$\chi^2(2) = 12.44$, $p = .01$] scores. Personal wellbeing scores did not significantly change during admission [$\chi^2(2) = 2.36$, $p = .31$].

Risk behaviours and restrictive practices (n = 41)

There were significant reductions (improvements) across admission in incidents of self-harm [$\chi^2(2) = 17.12$, $p<.001$], and the use of restraints [$\chi^2(2) = 13.65$, $p<.01$] and seclusions [$\chi^2(2) = 10.38$, $p<.01$]. The mean AAS, weighted by type and severity of risk behaviour, also significantly changed over admission [$\chi^2(2) = 14.97$, $p<.01$]. The reduction in incidents of violence approached significance [$\chi^2(2) = 5.90$, $p = .052$].

Pairwise comparisons

Table 1 illustrates the results of the pairwise comparisons, conducted to explore changes between time points. Generally, the most significant changes occurred across the 12-month admission period, comparing between scores at baseline and 12 months post-admission.

The exceptions to this were incidents of violence, and use of seclusions, which significantly reduced in the first 6 months only, and in severe disturbance (HoNOS-Secure) scores, which

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Table 1. Change in outcomes during 12-month admission to the DBT IPU

Outcome	Subscale (score range)	T0	T1	T2	T0–T1	T0–T2	T1–T2
		Mean (*SD*)	Mean (*SD*)	Mean (*SD*)	*p*	*p*	*p*
ReQOL	Mental health (0–80)	31.6 (16.5)	38.7 (14.4)	45.0 (21.5)	.079	.01*	.836
	Physical health (0–4)	3.1 (1.1)	2.7 (1.1)	3.0 (1.0)	—	—	—
CORE-OM	Global distress (0–136)	75.3 (29.8)	57.4 (23.0)	44.3 (31.0)	.016*	.001*	.096
	Wellbeing (0–16)	11.2 (4.0)	8.3 (3.9)	7.3 (5.1)	.020*	.019*	1.00
	Problems (0–48)	29.7 (10.6)	24.6 (8.7)	19.4 (12.0)	.029*	.006*	.089
	Functioning (0–48)	25.9 (11.6)	19.3 (9.6)	14.9 (12.1)	.049*	.001*	.128
	Risk (0–24)	8.4 (6.4)	5.3 (4.2)	2.7 (3.2)	.082	.004*	.052
CGI[a]	Severity (0–7)	5 (2.7)	5 (3.6)	5 (3.7)	—	—	—
	Improvement (0–7)	3 (0.6)	3 (2.7)	3 (2.7)	—	—	—
HoNOS-Secure[a]	Severe disturbance (0–12)	5.0 (2.12)	4.0 (2.12)	4.0 (0.10)	.000*	.001*	.814
	Personal wellbeing (0–16)	6.0 (4.13)	6.0 (1.10)	6.0 (2.10)	—	—	—
	Emotional wellbeing (0–16)	9.0 (5.14)	8.0 (4.13)	8.0 (4.13)	.002*	.002*	.788
	Socio-economic status (0–8)	2.0 (0.4)	2.0 (0.4)	2.0 (0.6)	.058	.287	.346
	Risk (0–12)	7.5 (5.10)	7.0 (4.10)	6.5 (2.10)	.012*	.001*	.016
	Need (0–16)	9.0 (6.12)	9.0 (7.12)	8.5 (5.12)	.044	.012*	.046
Risk behaviours[a]	Self-harm	3 (0.48)	1 (0.29)	0 (0.35)	.006*	.002*	.055
	Violence (persons/objects)	0 (0.50)	0 (0.18)	0 (0.26)	.004*	.029	.752
	Aggregated Aggression Score	24 (0.288)	12 (0.159)	0 (0.211)	.073	.001*	.030
Restrictive practices[a]	Restraint	1 (0.46)	0 (0.51)	0 (0.26)	.020	.001*	.234
	Seclusion	0 (0.18)	0 (0.6)	0 (0.17)	.007*	.016	.865

T0, baseline assessment; T1, 6-month post-admission assessment; T2, 12-month post-admission assessment.
[a]median and range values are reported for skewed variables.
*statistically significant result after applying the Bonferroni correction.

reduced marginally more in the first 6 months, compared with changes over the 12-month admission period. No significant changes in outcomes were observed in the latter 6 months of admission. Whilst a main effect was previously identified for socioeconomic scores on the HoNOS-Secure, *post hoc* time point comparisons were not significant on this subscale.

Discussion

The current study aimed to evaluate changes in outcomes for women with EUPD admitted to a specialist DBT service, building upon an earlier evaluation (Fox *et al.*, 2014), conducted prior to the adoption of a value-based model of care. The findings demonstrate improvements in quality of life (ReQOL), psychological functioning (CORE-OM), health and social functioning, and security risks and needs (HoNOS-Secure), as well as reductions in self-harm and restrictive practices. Whilst reductions in incidents of violence bordered significance, the frequency of these incidents at baseline was already low. Accounting for the type and severity of incidents, analysis showed a significant reduction in AAS scores over admission. Generally, the most significant improvements occurred over the 12-month admission period, suggesting that a shorter 6-month admission duration is not substantial in eliciting significant improvements.

No significant differences were found on measures of physical health (ReQoL), socioeconomic status or personal wellbeing (HoNOS-Secure). Nevertheless, there are a number of important caveats to consider. Firstly, physical health was measured on a singular self-report item only. Additionally, the non-significant change in socioeconomic status, a subscale consisting of the items 'problems with living conditions' and 'problems with occupation and activities', is likely to be a reflection of the setting itself; patients were detained to a secure in-patient service and thus were out of employment with restricted opportunities for activities. Thirdly, average scores on the personal wellbeing HoNOS-Secure subscale were somewhat low at each time

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point. Additionally, given that patient-reported ratings of 'wellbeing' on the CORE-OM did significantly change over admission, this may reflect a discrepancy in perceptions between clinicians and patients.

The changes reported here are largely consistent with those reported previously by Fox *et al.* (2014). There are, however, some discrepancies in the point of admission for which the greatest improvements in outcomes occurred. Whereas Fox *et al.* (2014) reported the most significant improvements in outcomes between baseline and 6 months post-admission, there was a tendency for the greatest changes to occur between baseline and 12 months post-admission. This may therefore suggest that improvements in patient-valued outcomes take longer to manifest. The exception to this trend was in the frequency of seclusions and violence, where significant reductions were found between baseline and 6 months only.

Limitations

The study reports on outcomes across 12-month admission to the DBT IPU. However, of those who had been discharged, the average length of stay exceeded one year. Further investigation into outcomes over a longer admission period is therefore warranted. Furthermore, data were not available for the whole sample on all outcome measures, and thus the findings reported are reflective of separate subsamples. Finally, the IPU delivers holistic care through a multidisciplinary team to address all areas of need, and thus it cannot be concluded that improvements were a direct result of the DBT programme itself.

Supplementary material. To view supplementary material for this article, please visit: https://doi.org/10.1017/S1352465822000467.

Data availability statement. The current study reports on confidential patient data and thus is unavailable to access.

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Conflicts of interest. The authors declare none.

Ethical standards. All authors have abided by the Ethical Principles of Psychologists and Code of Conduct as set out by the BABCP and BPS. Informed patient consent was not sought as the current study was an internal service evaluation, utilising anonymous, routinely collected data held by the service. The current study was an evaluation of the DBT service, based on routinely collected clinical assessments, and thus formal ethical approval was not required. However, approval was sought from the organisation's internal Clinical Audit and Assurance committee and the services' clinical director.

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