Clinical outcomes in the routine evaluation of psychotherapy given by trainees: Effects on clients' inter-personal problems and psychological symptoms.

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Abstract
A significant proportion of the psychotherapy in Sweden is delivered by psychology trainees at special educational clinical departments within the universities. The aim of this study was to investigate the effectiveness of the treatments at three clinics measured by outcomes of psychiatric symptoms and functioning (Clinical Outcomes in Routine Evaluation – Outcome Measures) and interpersonal problems (Inventory of Interpersonal Problems). The study included within-group comparisons based on data from 734 clients collected before and after individually short-term psychotherapy. The results show quite large effect sizes for the pre-to post- changes for psychological symptoms and for interpersonal problems; and a medium effect size for functions in general. About 60% of the clients had clinically symptoms and functional problems before therapy and around 60% of these 'recovered'. Therefore, trainee-given therapy is clinically effective and should be seen as a helpful complement to the treatment of common psychiatric health problems.
Keywords: Interpersonal problems, Psychological symptoms, IIP, CORE-OM, Psychotherapy training, Trainee effectiveness, Outcome.

During the last three semesters of the Swedish five-year psychologist training programs, the trainees were delivering clinical practices in psychotherapy at training clinics operated by psychology departments within the universities. The benefits of this kind of 'trainee-delivered' psychotherapy to other types of delivery, are the carefully supervision of the psychotherapy; the low client's fee; and the significantly shorter waiting period before treatment compared to the waiting periods in primary-care or psychiatric units.

Since 2013, a national computer-based register at three of these educational clinical departments in Sweden has collected patient-reported, individual-based information at the beginning – and at the end – of the psychotherapy process. The primary aim of this register is to be used actively, and integrated for quality improvement, continuous learning, research, and ultimately to create a 'state-of-the-art' psychotherapy with the best 'health-gain' for the patients.

Randomized controlled trials (RCT), are still the "gold standard" in research of the effects of psychotherapy. However, RCTs can also be seen as lacking ecological validity, since the strict inclusion / exclusion criteria, manualized treatments, the randomization, and the supervised process,

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significantly impair the generalizability of the findings. Therefore, effectiveness studies – that is studies in clinical settings – have become more common as a complement to RCTs (Lutz, 2003).

Although the setting of 'trainee-given' psychotherapy sessions are somewhat similar to general-practice psychotherapy, it also has some of the advantages of RCT studies. Before the start of psychotherapy, the clients are interviewed regarding any inclusion/exclusion criteria. Moreover, the trainees are carefully educated in … and are practicing … specific psychotherapeutic methods; and they are also continuously supervised by a licensed psychologist/psychotherapist.

One criterion in effectiveness studies (proposed by Shadish *et al.* (2000)) is that psychotherapy 'must' be delivered by experienced therapists. However, effectiveness studies that compare: **(a)** trainee-given psychotherapy; and **(b)** psychotherapy given by more experienced psychotherapists; have shown between 'modest' differences to 'no' differences in effectiveness (e.g. Berglar *et al.*, 2016; Nyman, Nafziger & Smith, 2010; Okiishi *et al.*, 2003; Stein & Lambert, 1995; Wampld & Brown, 2005).

The general size of 'treatment effects' of psychotherapy hovers around an effect size of .60 (.40 to .80) (Lambert, 2013, pp. 176) and the general findings of 'treatment effects' show small and negligible differences of effect sizes comparing therapeutic orientations (Cuijpers *et al.*, 2016; Dominic, 2016). Psychotherapies conducted by trainees show results slightly less than have been found for treatment conducted by experienced psychotherapists (Dennhag *et al.*, 2011; Stein & Lambert, 1995).

When comparing the outcomes of psychotherapies of experienced therapists and those of trainees, one has to consider different levels of client difficulties and supervision resources. The experienced therapists seem: **(i)** to be more effective handling patient's with more severe psychological problems (Berglar *et al.*, 2016), and **(ii)** to need fewer sessions than untrained therapists to reach the same outcome (Strosahl *et al.*, 1998), and also to have fewer therapy drop-outs (Stein & Lambert, 1995).

The current state of the art shows that inexperienced therapists can be reasonably effective, (Atkins & Christensen, 2001; Dennhag, Ybrandt & Armelius, 2011; Ryum, Stiles & Vogel, 2007) and that the amount of professional experience and training is not fully identical with the therapists' effectiveness (Berglar *et al.*, 2016). Due to the relatively small number of effectiveness studies with focus on the outcomes of trainee-given psychotherapy, the question remains about how these results can be generalized into wider clinical practice and especially the use of trainee-given psychotherapy in that context.

The effectiveness of trainee-given psychotherapy is important to study for the large portion of psychotherapy provided by less experienced trainees (such as pre-doctoral interns of psychology). The aim of this particular study was to examine the effectiveness of psychotherapy,

delivered by trainees, measured by outcomes of clients **a)** psychological symptoms, as well as **b)** functioning and **c)** interpersonal problems. The study included 'within-group' comparisons based on data collected before and after therapy and pre-post changes as well as clinically significant changes were calculated. The study also include, based on the same data, an examination of possible differences between Cognitive Behavioral Therapy (CBT) and Psychodynamic psychotherapy (PDT) for the effectiveness of psychotherapy on clients' psychological symptoms and interpersonal problems,.

Method

Procedure

Individuals, who expressed interest in undergoing psychotherapy (the client themselves could choose either CBT or PDT) at the educational clinics, had first to be interviewed and assessed by a licensed psychologist. Exclusion criteria for participation in the psychotherapy were severe psychiatric illness and/or having a personality disorder, alcohol/drug dependence. If the client were assessed as fit for therapy, informed consent was obtained for participation in the study. The client had also, on his/her own and in a separate room, to fill in a computer-based questionnaire with background data and questions regarding well-being, psychological symptoms and interpersonal problems. A short time after the interview, the therapy started. Regarding CBT, the time-span could vary from 4 weeks (e.g. for a simple phobia) to half a year (e.g. for an obsessive-compulsive syndrome) with different frequency of the sessions. For PDT, the time-span of the therapy was between half a year, to one and a half year mostly with a frequency of once-a-week sessions. At the last therapy session, the client had again to fill in the same computer-based questions, on his/her own, and in a separate room. The study was approved by the regional ethical board at Lund University (No: 2014-303).

Clients

The sample in this study was 734 out-patient clients (Men: 182 [24.9%]; Women: 550 [75.1%]): from three different educational clinics in Sweden **((i)** Department of Psychology at Umeå University; **(ii)** Department of Psychology at Lund University and **(iii)** Department of Psychology, at University of Gothenburg). The data was collected between the years of 2013–2015. The inclusion criterion for participation in the study was to have completed 'pre-test' data at the beginning of the therapy, and 'post-test' data in the end of the therapy. Exclusion criteria were a diagnosis of 'personality disorder', 'severe psychiatric disorders' or 'alcohol/drug dependence' or to have missing data in either the pre-test or the post-test survey.

The clients had either undergone **CBT** (CBT; n=451, 61.5%) or **PDT** (PDT, n=282, 38.5%). There was no difference in background variables between the CBT and PDT clients except a difference in age where the CBT clients (M=30.35 years, SD=10.67) were significantly older than PDT clients (M=28.12 years, SD=7.41; t(729) =3.10, p=0.01) (see Table 1). The CBT group also had had psychological problems for significantly longer than the PDT-group (M=11.54 years, SD=12.54 vs. M=8.88 years, SD=6.91; t(723) =3.33, p=0.01 (Table 1).

The psychological problems that the clients wanted help with differed among the two treatments groups. More clients in the PDT group (78.0%) wanted help with depression/depressed mood than the CBT group (62.1%; $\chi 2$ (1, N=524) =13.42, p< 0.001). More clients in the PDT group (91.7%) wanted help with identity/self-image than the CBT group (71.6%; $\chi 2$ (1, N=576) =33.32, p< 0.001). More clients in the PDT group (79.9%) wanted help with problems in relationships than the CBT group (46.5%; $\chi 2$ (1, N=456) =49.55, p< 0.001). More clients in the CBT group (45.8%) wanted help with problems with phobias than the PDT group (18.6%; $\chi 2$ (1, N= 359) = 23.97, p< 0.001). There were no differences among the two treatment groups regarding stress-related problems or anxiety problems. However, there were significant more in the PDT group (33.1%) than the CBT group (18.0%; $\chi 2$ (1, N=350) = 9.36, p< 0.01) who had other problems (not specified) than the following problems: anxiety, depression, self-identity/self-image, stress-related problems, problems in relationships and phobia, see Table 1.

Table 1: Comparisons between CBT and PDT in background variables.

Data is presented as m ± sd or %.

	CBT (n = 451)	**PDT** (n = 282)	**t or $\chi 2$**	**df**
Sex (women)	76.7 %	72.5 %	1.43	1
Age	30.35 ± 10.67	28.12 ± 7.41	3.07**	729
Relationship				
Having a relationship	43.8 %	41.4 %	1.34	2
Single household	37.4 %	36.3 %		
Living with parents, friends		18.8 %	22.3 %	
Education				
Primary school	1.6 %	0.7 %	5.60	2
High school	19.7 %	26.7 %		
University	78.7 %	72.5 %		
Occupation				

Employed	40.9 %	37.8 %	6.59	3
Unemployed	2.2 %	5.4 %		
Studying	49.0 %	51.1 %		
Other	7.8 %	5.8 %		
Psychological problems				
Years of duration	11.54 ± 12.54	8.81 ± 6.96	3.33**	723
Anxiety	79.2 %	84.3 %	1.92	1
Identity/self-image	71.6 %	91.7 %	33.32***	1
Depression	62.4 %	78.0 %	13.42***	1
Problems in relationships	46.5 %	79.9 %	49.55***	1
Stress-related problems	47.9 %	58.5 %	3.82	1
Phobias	45.8 %	18.6 %	23.97***	1
Other	18.0 %	33.1 %	9.36**	1
				** $p < 0.01$, ***$p < 0.001$

Trainee therapists

In Sweden, psychotherapy education is divided in two parts, a two-year, full-time, basic level and an advanced level. The candidates on the basic level must generally complete 120 hours of supervised therapy, 50 hours of individual therapy, and pass examinations on theory. The second level – which is required for registration as a psychotherapist – involves a three-year advanced education program offered on a part-time basis. This program includes two years of psychotherapy practice under supervision.

The students in the present study were all at the basic level of training, which was part of a 5-year-long professional psychology program on a ground- and advanced level. In the present study, all trainees had completed at least three years of their education and had performed their first psychotherapies with clients.

The psychotherapies (both CBT and PDT for all trainees) were distributed over three to four semesters and every trainee treated between two to five clients. Although the training conditions were not strictly manualized, all students had passed the same theoretical courses for the therapy approach that they provided. The students in PDT-trained therapeutic techniques focusing on how the therapist, with interventions such as clarifications and interpretations of resistance and transference, enhances the client's understanding of patterns in their actions, thoughts, feelings, experiences, and relationships. With respect to CBT, the students were trained to focus on the impact of the client's present dysfunctional thoughts on current emotions, behaviour and future functioning. Parallel with the training in the specific psychotherapies, the trainees underwent

courses in other theories and methods. The trainees were supervised by a licensed psychologist/psychotherapist in small groups (three to four trainees) once a week (in total 120 hours). The trainees documented and reported about their client's therapy process every week for the supervisor. The supervisor was either a licensed psychodynamic psychotherapist or a licensed cognitive behavioural psychotherapist, most often with a special supervisor education and a long working experience. The training was located at training clinics at the psychology departments.

Instruments

Inventory of Interpersonal Problems (IIP)

IIP is a 64-item, self-administered questionnaire assessing eight different aspects of subjective experienced interpersonal problems (Horowitz *et al.*, 1988; Weinryb *et al.*, 1996). Each aspect is represented by eight questions rated on a Likert scale ranging from 0 (not at all) to 4 (extremely). The eight aspects of interpersonal problems are the following: Domineering, Vindictive, Cold, Socially Avoidant, Submissive, Exploitable, Overly Nurturing, and Intrusive. All scores on the different aspects can also be summarized in a total score for interpersonal problems. IIP has been shown to have good validity and reliability in both the English (Horowitz *et al.*, 1988) and the Swedish version (Weinryb *et al.*, 1996)

Clinical Outcomes in Routine Evaluation – Outcome Measures (CORE-OM)

The CORE-OM (Evans, 2002; Elfström et al., 2013) is a short, self-administered instrument developed for measuring the effects of psychotherapy. It includes 34 items assessed in four domains: Psychological well-being (4 items), Symptoms (12 items), Functioning (12 items) and Risk (6 items). The domains of Symptoms, Functioning and Risk can also be divided into sub-scales. The sub-scales for Symptoms are: Depression, Anxiety, Physical symptoms, Traumas and Close Relationships. The sub-scales for Functioning are: General functioning and Social functioning, and the sub-scales for Risk are: Risk to Self and Risk to Others. The answers are rated on a Likert scale ranging from 0 (not at all) to 4 (most or all the time), with higher scores indicating higher level of perceived psychological problems. The answers can be summarized in a total score (Global distress) with the risk questions included or excluded. The Swedish version (Elfström *et al.*, 2013), as well as the original version of the CORE-OM (Evans, 2002) has been shown to have good validity and reliability.

Statistical Analysis

Changes in interpersonal problem and symptom measures during therapy were analysed with paired-sample t-tests and MANOVA was used to calculate comparisons between groups on methods (PDT and CBT) (SPSS, Version 23). The effect sizes, Cohen's d (Cohen, 1988) were calculated as the difference between pre- and post-test means, divided by the pooled standard

deviation for both of the means, according to Lipsey and Wilson (2001). Clinically significant changes were examined for Global distress, Problem/symptom and Life/social functioning domains (CORE-OM) with the Reliable Change Index method (Jacobson & Truax, 1991). RCI was calculated as a difference score (post-test minus pre-test) divided by the standard error of measurement (based on the reliability of the measure). The reliabilities of the various measures were: for Global distress, r =.86; Problem/symptom domain, r =.80; and Life/social functioning domain, r =.81 (Elfström *et al.*, 2013). The RCI criteria at the 95% confidence interval were: for Global distress ≥ .22 scores; problem/symptoms domain ≥ .33 scores; and Life/social functioning domain ≥ .25 scores. The number of clients moving from a dysfunctional to a normative range was based on the normative-dysfunctional standardized cut-off values for men and woman, recommended by Elfström *et al.* (2013). Individual clients were classified as either 'recovered' (i.e., passed both cut-off and RCI criteria); 'improved' (i.e., passed RCI, but not cut-off criteria); 'unchanged' (i.e., passed neither criteria); or 'deteriorated' (i.e., passed RCI criteria in the unintended direction) (McGlinchy, Atkins & Jacobson, 2002).

	Pre-test		Post-test		95% CI			Cohen´s
	M	*SD*	*M*	*SD*	*LL*	*UL*	*t(733)*	*d*
Interpersonal problems								
Domineering	5.37	4.27	4.27	3.64	.86	1.33	9.05***	.26
Vindictive	6.04	4.23	4.83	3.79	.98	1.45	10.24***	.29
Cold	6.97	5.24	5.66	4.79	1.03	1.59	9.19***	.25
Socially avoidant	9.50	6.24	7.81	5.68	1.36	2.01	10.18***	.27
Submissive	12.99	6.64	11.15	6.39	1.48	2.21	9.85***	.28
Exploitable	13.30	5.92	11.42	5.70	1.53	2.22	10.54***	.33
Overly nurturant	12.66	5.70	9.88	5.22	2.43	3.15	15.21***	.49
Intrusive	8.86	5.17	7.11	4.47	1.48	2.03	12.55***	.34
Total problems	75.69	28.69	62.12	28.82	11.86	15.27	15.63***	.51
Psychological symptoms Domains							*t(720)*	
Subjective wellbeing	1.89	77	1.21	.74	.61	.74	19.86***	.90
Symptoms	1.92	.73	1.24	.73	.62	.75	21.72***	.93
Functioning	1.38	.57	.95	.55	.38	.47	17.45***	.77
Risk	0.20	.32	.10	.24	.07	.12	8.18***	.36
Global distress (non risk)	1.68	.61	1.11	.61	.52	.63	21.65***	1.75
Global distress	1.53	.54	.94	.53	15.14	18.18	21.47***	1.10

Note: *d* = .2–.49 small effect, .5–.79 medium effect, ≥ .8 large effect; *p < .05, **p < .01, ***p < .001

Table 2: *Descriptive statistics and paired t-test results for inter-personal problems (IIP) and psychological symptoms (CORE-OM)*

Results

Effects of psychotherapy on inter-personal problems and psychological symptoms

As shown in Table 2 (above), there were statistically significant differences between pre-test and post-test scores for all of the interpersonal problems, Domineering, Vindictive, Cold, Socially avoidant, Submissive, Exploitable, Overly nurturant, and Intrusive (IIP). The interpersonal problems decreased significantly from pre- to post- therapy, with small effect sizes. The clients' total interpersonal problems decreased in the treatment and the effect size was on moderate level. The pre-and post-mean values are shown in Figure 1.

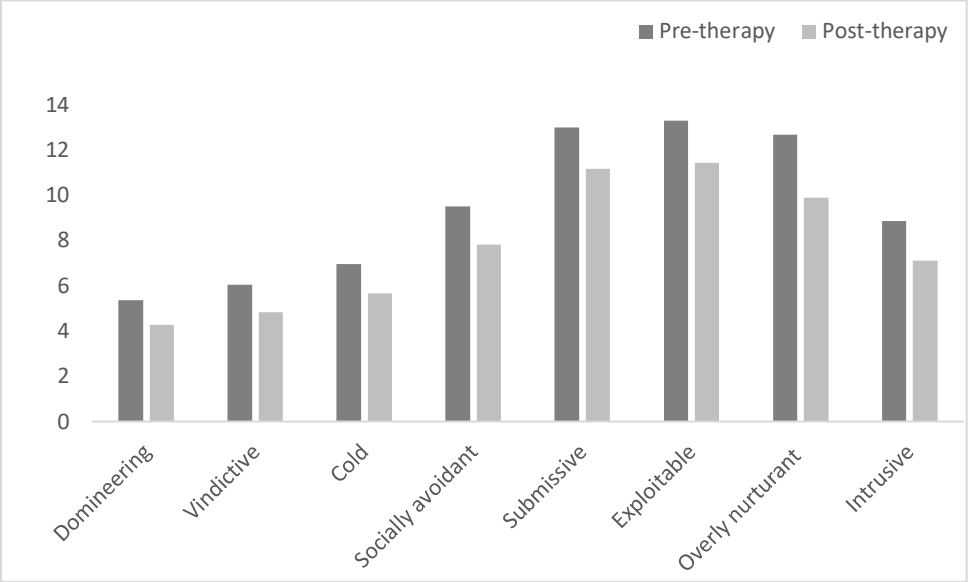

Figure 1: *Mean values for the interpersonal problems Domineering, Vindictive, Cold, Socially avoidant, Submissive, Exploitable, Overly nurturant, and Intrusive (IIP) at pre- and post-therapy.*

The Subjective well-being and Psychological symptom level (CORE-OM) improved with large effect sizes; the Function level improved with a moderate effect size; and the clients Risk level decreased between pre- and post- therapy with a small effect size. The pre-and post-mean values are shown in Table 1 and Figure 2.

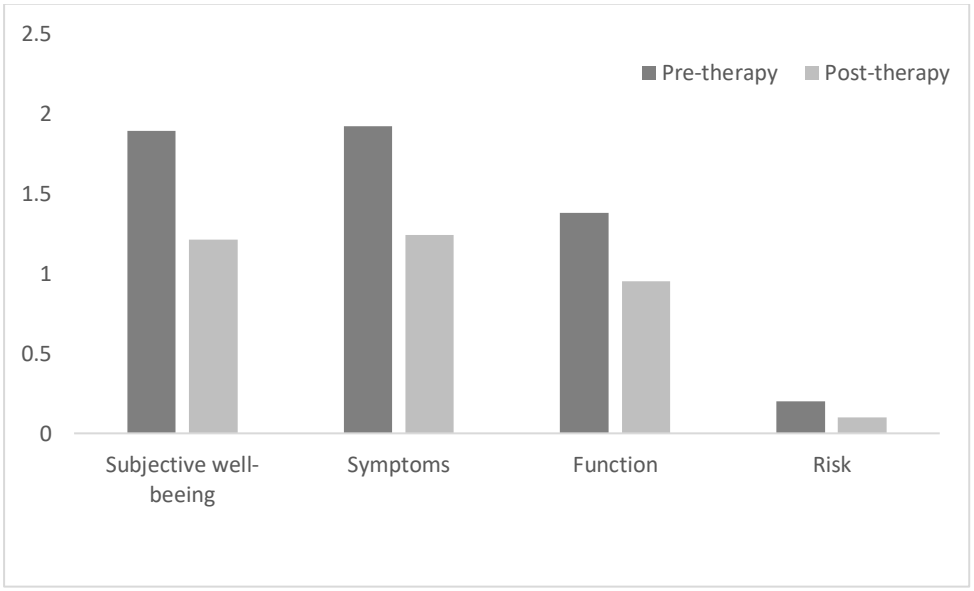

Figure 2: *Mean values for the psychological problem domains, Subjective well-being, Symptoms, Function and Risk (CORE-OM) at pre- and post-therapy*

A calculation of the pre- to post- change for the interpersonal problems, based on the normative t-values 70 and above, show large effect sizes. About 6.5 percent of these clients showed values above two standard deviation at pre-test on the Domineering scale (M =15.88, SD =3.19); 6.9 percent on the Vindictive scale, (M =16.02, SD =2.37); 9.8 percent on the Cold scale, (M =17.60, SD =2.69); 14.6 percent on the Socially avoidant scale (M =20.46, SD =3.18); 14.7 percent on the Submissive scale (M = 23.58, SD = 2.53); 9.3 percent on the Exploitable scale (M = 23.60, SD = 2.12); 9 percent on the Overly nurturant scale (M = 22.79, SD = 1.93); and 10.6 percent showed Intrusive problems (M = 19.04, SD = 2.90) above a t-value of 70. The within-group effects expressed with Cohen´s 'd' for these clients were for: Domineering, d =1.42; Vindictive, d =1.56; Cold, d =1.28; Socially avoidant, d =1.22; Submissive, d =1.34; Exploitable, d =1.59; Overly nurturant, d =2.10; and Intrusive d =1.58. The significant (p .000) changes show a large-sized effect with d =1.73 for the clients (11.9 % of the total clients) with IIP total normative t-values 70 and above (M =123.48, SD =9.06).

Clinically significant changes were found for Global distress (all non-risk items), Problem/symptom and Life/social functioning domains (CORE-OM) using the recommended standardized cut-off values (Elfström *et al.*, 2013).

A clinical Global distress was found at pre-test in 63% (n =472) of the clients in the total study group. After therapy, 67% of the clients with clinical values were recovered (n =315); 16% (n =76) were improved; 5% (n =24) were deteriorated; and 12% (n =57) were unchanged on the global distress variable (all non-risk items). Sixty-eight percent of the women, and nearly as many of the

men (62%) recovered in the group with levels of clinical Global distress. The proportion of clients that recovered with PDT was 62% and with CBT 70%.

The clinical group with Symptoms above cut-off at pre-test consisted of 67% (n =492: n =195 (PDT), n =297 (CBT)) of the total client sample. Of these clients, 62% (n =305) recovered; 6% (n =30) deteriorated; 16% were unchanged (n =76); and 16% (n =81) were improved after therapy. Of the clients with clinical symptoms recovered with PDT 54% (106), and with CBT 67% (199).

Clinical life and social functioning problems were present at pre-test in 61% (n =450: n =180 (PDT) and n =270 (CBT)) of the clients. Of these clients, 60% (n =305) recovered and 18% (n =82) made improvement in the domain. Some of the clients in the clinical group were unchanged (n =75, or 17%) or deteriorated (n =25, or 5%). In the PDT clinical group, 57% (n =103) of the clients recovered compared to 61% (n =165) of the clients in the clinical CBT group. The percentages of clients that: recovered, improved, deteriorated and unchanged on Global distress and the domains symptoms and function (CORE-OM) in the group of clients with pre-test dysfunctional problems are presented in Table 3 (below).

	Global distress n = 472	Symptoms n = 492	Function n = 450
Recovered	67 %	62 %	60 %
Improved	16 %	16 %	18 %
Deteriorated	5 %	6 %	5 %
Unchanged	12 %	16 %	17 %

Note: N = 734

Table 3: *Percentages of those who recovered, improved, deteriorated and unchanged clients on Global distress and the domains symptoms and function (CORE-OM) in the group of clients with pre-test dysfunctional problems.*

Method (PDT and CBT) differences in effects of psychotherapy on psychological symptoms and interpersonal problems

The effect differences between PDT and CBT have been calculated for the clients' Global distress, Interpersonal problems, and for Function and Symptoms domains.

Clients in the PDT group reported more Global distress compared to those CBT clients both: **(a)** before (M =80.51, SD =27.22 (for PDT), compared to M =72.69, SD =29.22 (for CBT)); and **(b)** after psychotherapy (M =67.81, SD =27.76 (for PDT), compared to M =58.58, SD =28.95 (for

CBT)) and the differences were significant (F(1, 720) =4.26, p =.039) and (F(1, 720) =6.65, p =.010).

There were also significant mean value differences between clients in the PDT and CBT groups: **(a)** before therapy, with higher values for PDT for problems in the Function domain (F(1, 720) = 6.55, p =.011, M = 1.45, SD = 0.55 (PDT) and M = 1.33, SD =.58 (CBT)). This difference remained at post-therapy; **(b)** at post-therapy, the PDT group also showed a significantly higher mean value (F(1, 720) =5.67, p =.018, M =1.32, SD =.71 (for PDT) and M =1.19, SD =.73 (for CBT)) for the Symptom domain. The effect sizes (ES) are large in both modalities for pre-and post-differences on: Global distress (ES-PDT =.97, ES-CBT =.93); Symptom domain (ES-PDT =.93, ES-CBT =.97); and medium for Function (ES-PDT =.78, ES-CBT =.75).

No significant differences with respect to method (PDT or CBT) were found on the total IIP problem variable at pre- or post- therapy.

Summary

In summary, large effect sizes (ES) were found for reduction in the clients' psychological symptoms and for higher level of interpersonal problems (T-values above 70). However, the general effects of treatment in the training context on inter-personal problems were of small effect sizes. The clients functioning on the sub-scale of the CORE-OM in general changes between pre- and post-therapy with a medium effect size. PDT clients reported significantly more problems before and after therapy and the effect sizes for the two modalities PDT and CBT were large and similar for Symptoms and Global distress. About 60 % of the clients had clinical symptoms and functional problems before therapy and around 60 % of them recovered, meaning that they no longer showed symptoms or functional problems on a clinical/dysfunctional level.

Discussion

The results in this study showed that clients in psychotherapy given by trainees resulted in improvements on psychological symptoms and on functioning, as measured by CORE-OM, with medium to large effect sizes. The results are in-line with earlier RCT studies measuring the efficacy of psychotherapy for common mental health problems, conducted by professionals (Abbas *et al.*, 2014; Cuijpers *et al.*, 2008; Cuijpers *et al.*, 2010) although these studies had a more rigorous and controlled design and therefore comparisons should be made with caution. Effectiveness studies on psychotherapy given by professionals have, during recent years, been conducted in the routine care (Stiles *et al.*, 2008). Stiles and colleagues examined the results for 5,000 patients with a variety of mental health problems in primary care. The outcomes for PDT, CBT and also for person-centred

therapy, as measured by CORE-OM, showed significant improvements post-treatment, regardless of treatment method, which is in-line with the results in the present study.

Previous effectiveness studies on CBT as conducted in trainee-given psychotherapy clinics, which are quite a few, have shown similar results (Forand *et al.*, 2011; Öst *et al.*, 2012). A study conducted in Norway (Ryum, Stiles & Vogel, 2007) on trainee-given psychotherapy treatments, based on different methods, found post-treatment improvements in both psychological symptoms and interpersonal problems, with small to moderate effect sizes. The trainees were students in the professional psychology program, and they did their psychotherapy training under continuous supervision, which is comparable with the psychotherapy settings in the present study.

Nyman and colleagues compared the outcomes of trainee-given treatment with treatment conducted by professional staff and found no differences in results at the end of treatment (Nyman, *et al.*, 2010). The trainees in the Nyman study, as in our study, had continuous supervision from more experienced professionals, which in turn could be an explanation of the equality of the results in both studies.

There were post-treatment effects on interpersonal problems, but less pronounced compared to the effects on symptoms and function. Interpersonal problems are not that common as outcome measures in treatment studies compared to measures capturing symptoms or function such as CORE-OM or disorder specific measures such as Beck Depression Inventory (Beck, 1961). The study conducted in Norway (Ryum et al. 2007) on trainee-given psychotherapy though used interpersonal problems as outcome measure and they found comparable effect sizes. The small effects on interpersonal problems were somewhat surprising for PDT, since interpersonal relations are often part of the focus of PDT treatment.

The improvements during treatment in the present study were evident, regardless of the method and student-given therapy, seem to have effect in both CBT and PDT, which indicates that both methods can be delivered by trainees in a safe and effective way. The findings for both CBT and PDT support previous results comparing the effect of CBT and PDT on depression, (Driessen *et al.*, 2010; Leichsenring, 2001). Studies on anxiety disorders have however found in favour for CBT as compared to PDT in treatment effects (Dominic, 2016). Though the clients, in most of these effect studies compared to ours, were more carefully diagnosed and had been excluded, if not fulfilling the inclusion diagnostic criteria. Our clients showed symptoms of both anxiety and depression and interpersonal problems, which are more similar to clients in routine care, who often have multiple problems (Roca *et al.*, 2009; Parker, 2014).

The clients in PDT showed more severe problems before treatment, as compared to the CBT clients, and this could have an impact on the therapy outcome, but – on the other hand – the therapies with PDT lasted longer than with CBT. Earlier studies have shown that clients with higher

level of distress need more sessions to reach clinical significant changes compared to clients with less distress (Andersson & Lambert, 2001). Several studies have been conducted trying to establish the optimal length of therapy with regard to severity of problems at treatment start and adherence and drop-out (Andersson & Lambert, 2001; Lambert, 2013) but no clear results have been presented.

Strengths and limitations

The sample was quite large, as compared to other studies with trainee-given therapy (Nyman *et al.*, 2010; Forand *et al.*, 2011; Öst *et al.*, 2012) and the data was collected at three different university clinics, which together make the sample more representative for trainee-given therapy than smaller samples collected at one single clinic. The adherence control of the delivered method was high since all trainee-therapists were supervised once a week throughout the therapy by a licensed psychotherapist with special training in supervision, which is a considerable strength whenever evaluating psychotherapy outcome. Data about drop-outs were not available, so no analyses comparing drop-outs and included clients were conducted, which is a limitation that could affect the generalization of the results.

The non-experimental design, with no control group, was also a limitation since we could not really know if it was the treatment that led to health improvements or were the improvements due to other factors. Also, the sole use of self-reported outcome measures can be considering a limitation.

Finally, we do not know if these positive changes were sustained, since we had no follow-up measures after the end of therapy, which is also a limitation. As noted, the trainee-therapists were closely supervised by experienced psychotherapists and could focus on one client at the time, which may have also contributed to the positive results. These factors limit the comparisons with other trainee-given therapies, which often have less supervision and also have several clients at the time.

The mental health problems in our sample were less severe, compared to routine care, which could have an impact on the generalization, although 67% showed clinical symptoms, 63% had a clinical global distress, and significant clinical changes have only been calculated on the clinical subgroups.

Conclusion

In conclusion, this study shows evidence that ‘trainee-given’ psychotherapy can be highly effective in reducing anxiety and depression symptoms, and – to a lesser degree – can effect interpersonal problems. Even though the results are promising, further research is obviously needed in order to understand under which conditions these results can hold, and whether these could be generalized to other settings. Further research could also investigate which psychiatric conditions, and what degree

of problem complexity is most treatable in such trainee-given therapies, and how long therapy would be needed for positive outcome results.

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