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The role of the early therapeutic alliance in predicting drug treatment dropout

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ABSTRACT

Background: To investigate the role of the therapeutic alliance in predicting length of retention in residential drug treatment.

Methods: The study recruited 187 clients starting residential rehabilitation treatment for drug misuse in three UK services. Counsellor and client information was assessed at intake, and the average total scores of client and counsellor ratings on the WAI-S (obtained during weeks 1 to 3) were used as the alliance measure. Length of retention and treatment completion (stay beyond 90 days) were used as measures of retention.

Results: Clients with weak counsellor-rated alliances dropped out of treatment significantly sooner than clients with strong counsellor-rated therapeutic alliances, whether or not the model adjusted for individual counsellor effects and potential confounders including psychological wellbeing, treatment motivation and readiness, coping strategies, and attachment style. The client-rated alliance did not predict length of retention. Apart from the alliance, pre-treatment crack use, secure attachment style and better coping strategies were associated with shorter retention, whereas greater confidence in treatment, older client age and better education predicted treatment completion. Counsellors with greater experience of delivering drug counselling retained clients longer.

Conclusions: The findings of this study stress the importance of treatment professionals attending to the therapeutic alliance in drug treatment, as counsellors' alliance ratings were found to be amongst the strongest predictors of dropout. Using alliance measures as clinical tools may help treatment practitioners to become aware of the risk of disengagement early on. Prospective studies are needed to evaluate whether strategies of reallocating clients with poor alliances to different counsellors lead to improvements in retention.

Key words: therapeutic alliance, drug treatment, retention, dropout

1. INTRODUCTION

It is recognised that any treatment programme will only have an effect if a client is retained in treatment long enough for it to have a chance to have an impact. Sufficient time spent in treatment has been consistently associated with positive changes in drug use, psychological health, medical health, criminal activity, and employment (Etheridge et al., 1999; Gossop et al., 1999b; Gossop et al., 2002; Gottheil et al., 1998; Grella et al., 1999; Simpson et al., 1997; Siqueland et al., 2002). Despite this, studies continue to report high dropout rates in all drug treatment modalities (D'Ippoliti et al., 1998; Deren et al., 2001; Gossop et al., 1998; Gossop et al., 1999a; Gossop et al., 1999b).

In the psychotherapy and counselling field, the quality of the client-counsellor relationship, or therapeutic alliance, has long been recognised as a significant predictor of outcomes in clients presenting with a variety of non-psychotic disorders across different treatment modalities (for two meta-analyses see Horvath and Symonds, 1991; Martin et al., 2000). Several reviews on the therapeutic alliance in generic psychotherapy or counselling settings have already been carried out covering a range of issues including the definition of the concept, measurement issues and the relationship between the alliance and psychotherapy outcomes (Horvath and Symonds, 1991; Martin et al., 2000; Marziali and Alexander, 1991), therapy characteristics and techniques (Ackerman and Hilsenroth, 2003), and the impact of the alliance on outcomes in short term dynamic, behaviour and cognitive therapies (Crits-Christoph and Connolly, 1999; Sweet, 1984; Waddington, 2002). The importance of the therapeutic alliance in predicting treatment completion in drug treatment has also been demonstrated in a recent review on this topic (Meier et al., 2005a), thus the following section will focus on the gaps in our knowledge that were highlighted by the review.

Although the majority of studies (six of eight) report predictive relationships between the therapeutic alliance and retention, there are striking inconsistencies in the findings regarding at which point in therapy the alliance predicts retention and which rater perspective (i.e. client, counsellor or observer ratings of the alliance) should be used. For example, whilst observer, but not client and therapist, alliance ratings predicted retention in one study (Fenton et al., 2001), both client and therapist ratings predicted retention in other studies (Barber et al., 1999; Barber et al., 2001; De Weert-Van Oene et al., 1999; De Weert-Van Oene et al., 2001). In Petry & Bickel (1999)'s study, only therapist ratings, but not client ratings predicted the alliance. Only two studies failed to find a significant relationship between the alliance and retention (Belding et al., 1997; Tunis et al., 1995). Both studies had very small sample sizes (Belding et al.: N=57 dropping to N=42 as the study progressed, and Tunis et al.: N=41 dropping to N=20) and thus may not have had the power to detect effects. Moreover, both studies disregarded clients who dropped out prior to the end of the first month (Belding et al. 1997) or third month (Tunis et al., 1995). If the early alliance predicts early dropout as suggested by the other studies, then it is

possible that clients with less optimal alliances may have left by the time the alliance was assessed for the first time in these two studies.

Apart from the inconsistencies in findings regarding rater perspectives, a further difficulty in interpreting the results in this area has been highlighted by Klein et al. (2003), that is whether there is enough evidence that the therapeutic alliance really predicts retention, or whether the association between the alliance and retention is caused by characteristics that may contribute to both poor alliances and poor retention. This key question has not been addressed within the field of substance misuse research (Meier et al., 2005a).

The current work aims to add to knowledge by examining the association between the therapeutic alliance early in treatment and dropout whilst controlling for potential confounders. Both client and counsellor perspectives of the alliance are assessed. The hypothesis is that a better early alliance predicts longer retention in treatment, even after adjusting for other client, counsellor and treatment factors.

2. METHODS

2.1. Procedure

The Counselling Project was a longitudinal cohort study of consecutive clients entering drug treatment in three residential treatment services between August 2002 and August 2003. These services were selected on the basis of their suitability, willingness and ability to accommodate a research project such as the Counselling Project. Two of these treatment services were 12-step (Minnesota model) programmes with scheduled durations of three months, the third was a modified therapeutic community with a schedule programme length of 9 months. Whilst some clients were treated during their probation period after release from prison, they were not legally mandated to treatment or faced adverse legal consequences for leaving prematurely. Clients in all three services followed a programme of daily group counselling and one to three individual counselling sessions per week. Treatment was augmented by educational and housekeeping activities. There was also daily informal contact with the primary counsellor throughout the programme. Information about the 24 study counsellors was gathered before the start of client recruitment. A member of staff brought the study to the attention of eligible new clients. Clients had the opportunity to ask questions and signed a consent form. Exclusion criteria were a) treatment for primary alcohol addiction, gambling or eating disorders, b) inability to read the English language, c) age less than 18 years, and d) remaining in treatment for less than 5 days so that an interview could not be arranged. The last criterion resulted in the exclusion of 23 clients who left after an average length of stay of 4 days. Four eligible clients refused participation. The remaining clients (n=187) were recruited and assessed during the first week of treatment. The intake

assessment consisted of a structured interview followed by a questionnaire, which clients completed with the researcher (t1). Both clients and counsellors were each asked to complete a weekly questionnaire about the alliance (t2). Only alliance data collected during the first three alliance questionnaires will be reported, as the focus of this paper is on the predictive capacity of the early alliance.

2.2. Measures

Demographics. Information was obtained about the client's age and gender.

Recent drug use. Clients were read a list of drugs and asked whether and for how many days per week they had used each of these drugs in the 30 days before treatment.

Adult Attachment Style was assessed using a modified version of the Relationship Questionnaire (Bartholomew and Horowitz, 1991). The original instrument is a single-item measure consisting of four short vignettes, each describing one of four adult attachment prototypes (secure, preoccupied, fearful, dismissing). The questionnaire was slightly modified by breaking up the vignettes into ten short sentences to allow clients to judge their agreement with each statement. The wording and response format were left unchanged. Ratings of the four attachment patterns using the questionnaire have shown stability over an 8 month test re-test period, but internal consistency was only moderate (Griffin and Bartholomew, 1994; Scharfe and Bartholomew, 1998).

Coping Behaviour was assessed by a questionnaire based on the Coping Behaviours Inventory (Litman et al., 1983), which was developed for use with alcoholics. It uses 19 modified items to assess what coping behaviours clients use when they have cravings. Some of the original items were not relevant for drug users, for example "waiting it out until everything is shut", the remainder were modified using wording appropriate to drug users (eg. "keeping in the company of non-drinkers" changed to "...of non-users"). The internal consistency of the modified scale was good ($\alpha=0.88$). Principal components analysis showed that there was a single common factor with $EV=6.3$, explaining 33% of the variance. All but one item had loadings of >0.40 on this general factor.

Treatment confidence was assessed by three questions each rated from 0 to 100%: a) how likely did the client think it was that s/he would complete treatment as scheduled, b) how likely did the client think it was that s/he would make important changes in life, b) how likely did the client think it was s/he would use drugs again three months after leaving treatment.

Psychological symptoms were assessed using the Addiction Severity Index Psychiatric Score (McLellan et al., 1980). The instrument assesses whether clients ever and currently experienced any of nine symptoms mainly from the depression and anxiety spectrum. The Addiction Severity Index items do not attempt to diagnose psychiatric illness, but rather give an impression of the client's feeling of mental stability.

Self-esteem, self-efficacy, desire for help, treatment readiness, social support, hostility, depression, and anxiety. These scales were taken from the Texas Christian University

Client Evaluation of Self and Treatment Scales (Simpson, 1998). The scales have been used in the many large-scale US drug treatment studies. Information on psychometric properties is available (Joe et al., 2002; Knight et al., 1994). Each item is scored on a 5-point Likert Scale (1=disagree strongly to 5=agree strongly).

Treatment Expectations Questionnaire. The Treatment Expectations Questionnaire was developed to capture clients' negative expectations about treatment. It is loosely based on a list of negative thoughts detailed in a paper by Liese & Beck (1995). Clients were asked to indicate how much they agreed with 10 statements on a 5-point Likert scale: strongly agree to strongly disagree. The internal consistency of the scale in the current study was satisfactory ($\alpha=0.74$). Factor analyses showed that there was a strong common factor ($EV>3$, 31% of variance explained) with high loadings of all items on this factor (all but one loading were >0.40). An indication of convergent validity is that negative expectations are inversely related to treatment confidence ($r=-0.37$, $p<0.001$) and self-efficacy ($r=-0.50$, $p<0.001$).

Counsellor characteristics. The staff questionnaire was a one page questionnaire completed by all counsellors before client recruitment commenced. It captured counsellors' demographic characteristics (age, gender, ethnicity), professional training, number of months experience in working with drug users and number of months in the current role, ex-user status, and job satisfaction.

Early Alliance Index. The alliance was assessed in weeks 1 to 3 using a slightly modified short 12-item client and counsellor version of the Working Alliance Inventory (WAI-S, Horvath, 1991; Tracey and Kokotovic, 1989), which asked clients to rate the items on a 14cm visual analogue scale with the two anchors "never" and "always". The item score was derived by measuring the distance between left anchor and the respondent's mark on the line in mm. Item scores were then added to obtain a WAI-S total score. The internal consistencies of the modified WAI-S were high: $\alpha=0.91$, 0.90, and 0.90 for the first three counsellor ratings and $\alpha=0.87$, 0.88, and 0.88 for the first three weeks of client ratings. The first three weeks' total WAI-S scores were averaged as an indicator of the early therapeutic alliance, called the Early Alliance Index in the remainder of the paper. Higher scores on the Early Alliance Index indicate a better therapeutic alliance. The mean of the counsellor rated Early Alliance Index was 113.52 (SD=18.63), the mean of the client ratings was 131.24 (SD=19.51). Both client and counsellor rated Early Alliance Indices were normally distributed ($\chi^2=4.66$, $p=0.10$, and $\chi^2=0.93$, $p=0.63$, respectively). The counsellor and the client Early Alliance Indices were not highly related ($r=0.29$, $p<0.05$). Thus, it would not have been appropriate to combine them into a single alliance score and they are treated as separate variables.

Length of retention and treatment completion. As scheduled treatment durations varied according to the service attended and the client's funding situation (ranging from 3 months to 12 months), clients were considered to have completed treatment if they stayed in treatment for a minimum of 90 days. A 90-day period that has been established as a minimum treatment threshold for positive outcomes in previous research (Gossop et al., 1999b; Joe et al., 1998, 1999). Length of retention (in days) was recorded for each client; for those staying longer than

90 days, a 90 was recorded. Both completion status and length of stay are entered in the reported Cox regressions (see below).

2.3. Statistical methods

Cox proportional hazard regression models were fitted to predict the length of retention from early alliance scores. Survival analysis, rather than logistic regression, was used because information on clients who stayed beyond 90 days was right-censored. Survival analysis is also capable of handling staggered intake (not all clients enrolled at the same time) and endpoints better than other regression procedures. The Cox regression procedure allows possible confounders to be added as covariates.

Robust regression estimation method. The study design was such that clients were nested within counsellors (i.e. each counsellor had several clients), and thus that observations were not independent. To account for this, each Cox regression model was recomputed adjusting for the “counsellor effect” by specifying the counsellor identifier as a cluster variable and using STATA 8’s robust regression estimation procedure (cf. Rogers, 1993).

3. RESULTS

3.1. Sample characteristics

Counsellors. All counsellors at each of the three research sites participated. Twenty-four counsellors treated the clients in the study, 8 (33.3%) in Agency A, 5 (20.8%) in Agency B, and 11 (45.8%) in Agency C. There were 13 (54.0%) female counsellors and counsellors had a mean age of 40.1 years (SD=9.6). Four counsellors were educated to undergraduate level (16.7%). Sixteen counsellors (66.6%) had counselling qualifications. Counsellors had spent an average of 27.9 months (SD=24.5) working in their current job, and 47.9 months (SD=28.2) working in the addictions field. Of the 23 counsellors who provided this information, 13 (56.5%) were ex-users. Each counsellor had between 2 and 13 clients in the study.

Clients. The total number of clients assessed was 187 (see Table 1). The clients in the study were predominantly male and in their 20s and 30s (median age 29.6, range 18 to 52). The majority of clients had been using heroin on a daily basis (145, 77.5%) and were injecting drug users (125, 66.8%). A quarter of clients were involved in regular problematic alcohol use in addition to their primary drug problem. The sample was typical for UK drug treatment samples with regard to age, gender and drug use (Department of Health, 1998, 2001; Gossop et al., 1998). Only 6% of clients had never been in contact with treatment services before and a third of clients had previous treatment experience in a residential rehabilitation service. Lifestyle variables pointed to unstable and unfavourable living circumstances for the majority of clients in the study: 27% were either homeless or in unstable living arrangements, over 40% had no school qualifications, and three quarters had been unemployed immediately

before treatment. Illegal activity was common, and three-quarters of clients had committed crimes in the three months before treatment entry. The levels of self reported psychological problems were high, and over half had been prescribed medication for psychological problems (excluding drugs used for substitution and detoxification).

Table 1. Characteristics of the clients

	n	%
Demographics		
Female	57	30.5
Age		
Age < 20	10	5.3
Age 20-29	89	47.6
Age 30-39	78	41.7
Age 40+	10	5.3
White	177	94.7
Social circumstances		
Left school without qualifications	80	42.8
Unstable accommodation/homeless	51	27.4
Worked in 3 month prior to treatment	39	20.9
Illegal activity in 3 month prior to treatment	138	73.8
Drug use in past 30 days		
Daily heroin use	145	77.5
Daily crack use	82	43.9
Daily problematic use of alcohol	47	25.1
Any heroin use in past month	153	81.8
Any crack use in past month	122	65.2
Injecting any drug in past month	125	66.8
Treatment and abstinence history		
Any previous treatment episodes	176	94.1
Previous residential rehabilitation treatment	59	31.6
Psychological history		
Ever experienced depression	131	72.8
Ever been prescribed medication for psychological problem	100	55.6
Ever experienced thoughts of suicide	120	66.7
Ever attempted suicide	79	43.9

Note. daily use was defined as use on 6 or 7 days per week, **problematic alcohol use was defined as >8 units per day (men) and >6 units per day (women) for at least 3 days a week

3.2. Dropout

Of 187 clients, 100 (53.5%) remained in treatment beyond 90 days and were classified as “completers”. The remaining 87 clients left treatment prematurely. The average (median) length of stay for clients who dropped out was 26 days. Of clients who discontinued treatment, 28.7% had dropped out by the end of the second week, 55.2% by the end of the first month and 80.5% by the end of the second month (day 60). A cluster of early dropout was evident around the second to third week of treatment. Almost a third of those leaving at any time in the study period left during this period. There were no significant differences by treatment service in a Cox regression predicting length of retention ($\chi^2=3.11$, $p=0.21$).

3.3. Relationship between the working alliance and length of retention

3.3.1. Bivariate analysis

Bivariate Cox regression analyses predicting length of retention from the Early Alliance Index were performed. Results show that the counsellor rated alliance (HR=0.980, $p<0.01$), but not the client rated alliance (HR=0.998, $p>0.05$), significantly predicted length of retention. Models were recomputed using the robust variance estimator (described above) which adjusts the standard errors to take account of the fact that each counsellor had several clients in the study and that observations were not independent, which somewhat increased the significance of the results for the counsellor rated alliance (counsellor rated alliance HR=0.980, $p<0.001$, client rated alliance HR=0.998, $p>0.05$).

3.3.2. Multivariate analysis

Robust estimation procedures, necessary because of the nested design in this study, do not currently allow for simultaneous entry of predictors, thus the number of predictors that can be entered whilst maintaining adequate power in is limited. As a first step, to narrow the range of predictors in the final model, Cox regression was used to test the association between length of retention, the alliance and each of the pre-treatment variables separately. Predictors not meeting a conservative selection criterion of $p<0.25$ were excluded at this stage: client gender, social support, psychological problems, self-esteem, treatment history, motivation and treatment readiness, as well as counsellor gender, ex-addict status and counselling qualifications. The remaining variables client age, educational background, attachment security, coping strategies, treatment confidence, treatment expectations, and frequency of heroin and crack use, and the counsellor variables age, time in drug counselling, and job satisfaction met the inclusion criterion and were entered into a simultaneous-entry robust estimation model (see Table 2).

The counsellor rated working alliance remained a highly significant predictor of length of retention after controlling for a large number of potential confounders. The clients' view of the working alliance, as previously, did not predict length of retention.

Table 2. Predicting dropout using the Early Alliance Index, controlling for potential confounders: Robust estimation Cox regression

	HR	SE	p
Working alliance			
Early alliance index: counsellor	0.939	0.013	0.000
Early alliance index: client	1.014	0.009	0.112
Client variables			
Attachment security	1.637	0.289	0.005
Coping strategies	1.063	0.023	0.004
Treatment confidence	0.990	0.003	0.001
Negative treatment expectations	0.882	0.034	0.001
Age	0.943	0.032	0.080
Education	0.239	0.065	0.000
No of days used heroin	0.884	0.071	0.124
No of days used crack	1.131	0.061	0.022
Counsellor variables			
Time in drug counselling	0.981	0.008	0.011
Job satisfaction	2.372	0.736	0.005
Counsellor age	1.074	0.019	0.000

Notes: Standard errors are adjusted for counsellor. Variables were included if they were selected as predictors in stepwise Cox regression (see Table 3).

3.4. Other predictors of length of retention

Although not specifically the topic of the hypothesis, other important predictors of length of retention were identified in this study and this section briefly summarises the main findings (see Table 2).

When controlled for other predictors, both secure attachment style and better coping strategies were associated with shorter retention. Greater confidence in treatment, but also more negative expectations of treatment predicted completion, as did older age and better education. In contrast, more pre-treatment crack use increased the likelihood of early dropout. Amongst the counsellor predictors, greater experience of delivering counselling treatment predicted longer retention, whereas older age was related to a shorter retention. Unexpectedly, greater job satisfaction amongst counsellors appeared to be related to a greater risk of clients dropping out, however, the bivariate relationship between job satisfaction and retention had been in the opposite direction, with job satisfaction being related to a significantly reduced risk of dropout. It does not become clear in this study why the effect changes when controlled for other variables.

4. DISCUSSION

The findings provide partial support for the hypothesis that clients with weaker alliances are more likely to leave prematurely. There is strong support for the counsellor rated alliance

predicting dropout, but the client rated alliance was unrelated to dropout in both bivariate and multivariate analyses. This finding is surprising, given that Horvath & Symonds (1991) meta-analysis found that the client rated alliance is the stronger predictor of treatment outcome. It would appear plausible that if clients rate their relationship as less successful, this would be more likely to predict dropout than therapist ratings because the clients are the ones making the decision to leave treatment. What is more, a number of studies in the drugs field have reported such positive associations between the client rated alliance and retention or completion (Barber et al., 1999; Barber et al., 2001; De Weert-Van Oene et al., 1999; De Weert-Van Oene et al., 2001; Petry and Bickel, 1999). As the alliance was assessed at a similar time as in these studies, it is not clear why the results differ and why in this study it is the counsellor rated alliance that shows the greater predictive capability.

Speculating on the mechanisms by which counsellor alliance ratings are linked with dropout, it is possible that therapists may be more sensitive to problems when negotiating tasks and goals. Maybe clients, rather than attributing the problems to the relationship, feel that treatment is not addressing their needs and respond by leaving. Another possibility has been suggested by Tryon & Kane (1993): if therapists' perceive a weaker bond and poor agreement on the purpose of treatment they may lose the motivation or confidence to work with the client. This then might result in a decline in the quality of actual therapeutic work, which in turn could lead to the client disengaging from treatment.

The effect of the counsellor rated alliance was such that with each 1 point increase in the alliance, the likelihood of the client dropping out before the end of the study period decreased by 6%. The implication of this finding is that if an intervention could be found that increased the average early counsellor rated alliance by one point, an extra 6 out of every 100 clients who currently drop out might remain in treatment, and a one point increase appears small given that the range of therapist rated alliance scores spanned more than 100 points.

Although not addressed by the study hypothesis, the present results suggested a number of other variables that significantly contributed to the explanation of dropout. Many of the psychosocial variables included in this study because of their known or suspected relationship with the alliance (Meier et al., 2005b) have been shown to be equally valuable predictors of length of retention, although sometimes the direction of effects was not as we had anticipated. One such finding was that more developed coping strategies and secure attachment style was associated with shorter length of retention. When talking to treatment professionals about this finding, they showed little surprise and interpreted this to indicate that clients with better psychosocial resources (or fewer psychosocial problems) might feel and often be ready to leave treatment before the formal end of the programme.

Greater confidence in treatment was associated with a greater likelihood of retention to the end of the study period, but, unexpectedly, so were negative expectations about treatment. It is possible that starting out with low expectations about treatment whilst still being optimistic that it can be helpful is a good combination, as clients with low expectations may be more open to the treatment experience and less likely to be disappointed when minor setbacks occur. The present results fit well with findings by Simpson and Joe (1993) that clients with fixed expectations about treatment benefits were more likely to drop out, and by Ryan and colleagues (1995) who found that clients expecting treatment to be helpful were more likely to stay in treatment.

Apart from these psychological variables, better educated clients and older clients were more likely to be retained for at least 90 days, which confirms the findings of previous studies in finding these effects and extends the findings to a residential sample (De Weert-Van Oene et al., 2001; Joe et al., 1998; Sayre et al., 2002; Siqueland et al., 1998; Siqueland et al., 2002).

More experienced counsellors were able to retain their clients in treatment for longer, and length of experience of delivering counselling appeared to be a more influential predictor than having a formal counselling qualification. This is an important finding, because despite the fact that it confirms what might be expected, there is limited research evidence that experience plays an important role (for a review see Najavits and Weiss, 1994).

There are several strengths of the study design: The effect of the individual therapist was controlled for when predicting dropout from the therapeutic alliance, which was assessed from both the client's and the counsellor's perspective. Many studies have failed to statistically adjust for the effects of individual counsellors, but this is problematic as there is evidence that similar training and qualifications do not guarantee that therapists are equivalent in their delivery of therapy (Crits-Christoph et al., 1990; McLellan et al., 1988). Finally, client and counsellor pre-treatment characteristics suspected to contribute to both poor alliance and dropout, and thus having the potential to act as confounders, were assessed at intake, thereby addressing concerns raised by Klein et al. (2003). In the multivariate model predicting length of retention, these potential confounders were included as covariates, partialling out their influence on the alliance-dropout relationship. Even when controlling for confounders, the alliance remained a significant predictor of dropout, thus making it implausible that the relationship is spurious.

A potential confounding effect of a process variable not assessed in the study was suggested by Marmar and colleagues (Marmar et al., 1986; Marmar et al., 1989). A client's discontent with their early treatment progress might be reflected in poorer client alliance ratings more indicative of the dissatisfaction than of the relationship. This same dissatisfaction might also be related to early dropout. If this scenario was true, improving the relationship would not

have an effect on the retention rate. An argument against this alternative explanation is that it was the counsellor rated alliance rather than the client rated alliance that predicted treatment retention. A further weakness of the study is that we did not assess whether criminal justice referral into treatment, and so cannot determine whether clients who experienced legal pressure to be in treatment were more or less likely to benefit from a good alliance.

The decision to use a naturalistic setting for the study has both advantages and disadvantages. Studying therapeutic relationships as they occur in drug treatment services has the benefit of good external validity. The trade-off for this increase in external validity is a decrease in internal validity. Despite the inclusion of a large set of potential predictors of the alliance and dropout, many variables related to the treatment setting and the delivery of treatment could neither be held constant nor assessed and statistically controlled. An example of this is the effects of the dynamics in the resident client group at the service at each given time, which might have a strong effect on the atmosphere in the service and may well influence a clients' decision to stay in or leave treatment, and also the intensity of treatment, which may have varied over time and between services. Another variable that could not be controlled was clients' relationships with other staff members, a potentially critical variable in residential rehabilitation, where the primary counsellor is supported by several other team members.

A further weakness of the study is that the selection of treatment centres was not the result of random sampling. Thus it is possible that the services' motivation to participate in a study on dropout may be related to important variables such as treatment philosophy, staff training, job satisfaction, or retention rates. The question is whether there is a reason for assuming that the underlying mechanisms or models of retention work differently in "research motivated" and "research unmotivated" services. For example, the validity of the study might be challenged if there was a reason to believe that better therapeutic alliances are not related to outcomes in agencies not motivated to participate in research. However, no such reason is apparent.

The clients in the present study were a sample with high problem severity treated in residential rehabilitation treatment services and therefore the findings are best generalised to similar client groups and settings. The fact that alliance ratings were not available for clients who left treatment in the first two weeks means that results should only be generalised to clients who have become at least minimally engaged.

5. CONCLUSIONS

The findings of this study stress the importance of treatment professionals attending to the therapeutic alliance in substance misuse treatment. Therapists' alliance ratings were found to be amongst the strongest predictors of length of retention. Encouraging treatment practitioners to use alliance questionnaires as a clinical tool or at least to consistently include their perceptions of the alliance in their case notes may help them to become aware of the risk of disengagement early on. Also, if clients with poor alliances are less likely to remain in treatment, then an early routine assessment of the alliance may be indicated, possibly followed by a transfer to a new therapist if a supportive alliance has not been established. Prospective studies would be needed to evaluate whether strategies of reallocating clients to different therapists lead to better retention.

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