

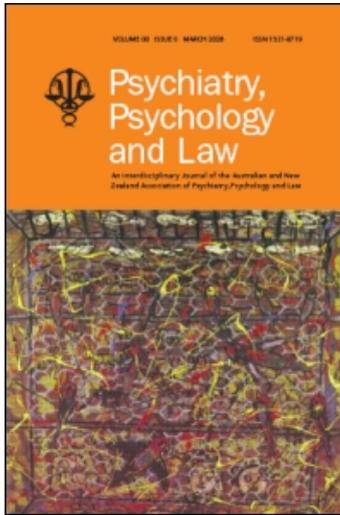
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Psychological Change in Voluntary and Legally Coerced Clients of a Residential Drug and Alcohol Treatment Programme

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Self-report measures were used to investigate psychological symptoms, motivation for change and empathy in male residential clients of an alcohol and drug treatment programme. Thirty-eight participants entered treatment voluntarily and 42 participants were under various forms of legal coercion to enter treatment. Data were collected for all participants 10–15 days into treatment and again, for those remaining in treatment, at approximately 5 weeks and 10 weeks after admission. Overall, the results showed little that differentiated the psychological profile of these cohorts early in treatment or subsequently over ensuing weeks. Both types of residents, at the group and at an individual level, reported substantial improvements in their psychological state with time. Younger clients who had lived in one place for 6 months prior to programme entry were more likely to leave treatment in the first 5 weeks. Legally coerced clients were more likely than voluntary clients to drop out of treatment between 5 and 10 weeks.

Key words: legal coercion; psychological functioning; residential treatment; substance abuse.

Estimates are that 6.5% of Australian adults have an alcohol use disorder and 2.2% have a drug use disorder (Teeson, Hall, Lynskey, & Degenhardt, 2000). Substance use disorders (substance dependence and substance abuse) entail a cluster of adverse physical and psychosocial consequences (American Psychiatric Association, 1994). Associations have been found between substance abuse and a range of psychological health problems including anxiety, depression and co-occurring mental disorders (Baker & Lee, 2003; Brunette, Mueser, & Drake, 2004; Marsden, Gossop,

Stewart, Rolfe, & Farrell, 2000). Behaviourally, substance use disorders are associated with dysfunction at home, at work and in the community (Bryan & Havens, 2008; Freeman, 2001; Hall, 1997; Kelly, Darke, & Ross, 2004; Pidd et al., 2006) and these co-occurring behaviours manifest in many ways.

Treatment for substance use disorders is a mental health priority and intervention efforts are both ubiquitous and varied (Magor-Blatch, 2008). For example, interventions may (a) target individuals or groups, (b) occur in outpatient or

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residential settings or combinations of both, (c) emphasize psychosocial or pharmacological control, (d) emphasize different therapeutic modalities and content, (e) vary in duration and intensity, and (f) cater to differing client characteristics such as age, gender, ethnicity/culture and dual diagnosis. Moos (2003) puts such parameters into perspective in proposing seven interrelated principles that underpin effective treatment and recovery. Generally, research evidence supports the effectiveness of combined cognitive behavioural and psychosocial interventions delivered in programmes such as 12-step treatment and therapeutic communities (Moos, 2003). Therapeutic communities treat addiction as a disorder of the whole person with its antecedents in social and psychological problems (DeLeon, Melnick, & Kressel, 1997; Marsh & Dale, 2005). Therapeutic communities emphasize empathic relationships between treatment staff and clients in the context of a structured treatment programme. Such residential treatment facilities involve a mix of new and ongoing clients who also support each other via shared rules, norms and expectations (Brunette et al., 2004, Finney, Noyes, Coutts, & Moos, 1998). Residential facilities are well-positioned to stabilize living conditions and offer a range of psychological interventions with substance abuse treatment. One such residential treatment programme in the style of a therapeutic community was the setting for the research described here.

Research into alcohol and drug treatment presents a variety of challenges. A central issue concerns treatment targets and criterion measures. Distal outcomes such as reductions in substance use, non-offending, employment and relationship stability are important but so are psychosocial and health improvements (Freeman, Karski, & Doak, 2000; O'Callaghan, Sonderegger, & Klag, 2004). Improvements in psychosocial functioning exert positive

influences on therapeutic engagement, treatment retention and ultimate treatment goals (Brunette et al., 2004; Kressel, De Leon, Palij, & Rubin, 2000; Lovejoy et al., 1995). Clearly, recovery and change are a complex interaction of ingredients across time and it is essential to understand elements of the process (Simpson & Joe, 2004). Evaluating psychological change during residential substance abuse treatment was the focus of the current study.

Brunette et al. (2004) and Hall (1997) note difficulties in achieving the gold standard of a randomized controlled study in the alcohol and drug treatment field. Programme evaluation has long been important and more so in recent times, with evidence-based practice being central to health care. The evidence-based practice framework promulgated in psychology (APA Presidential Task Force on Evidence-Based Practice, 2006) emphasizes the benefits of different kinds of research designs and evidence. Within this framework, practice-based research is valued for its contributions to the more controlled and internally valid empirical trials. The current study was a practice-based investigation of psychological change for voluntary versus legally coerced clients in treatment. Within an evidence-based practice framework, it is important to examine client characteristics that may affect symptomatology and response to treatment (Levant & Hasan, 2008).

The issue of client coercion is relevant to therapeutic jurisprudence approaches to crime and substance use (Winick, 2008). Diversion programmes aim to strike a balance between the treatment needs of substance-abusing offenders and criminal justice sanctions. Diversion can occur at various stages of the criminal justice system (O'Callaghan et al., 2004), from initial police involvement to legal and court processes, and finally to the correctional system (e.g., probation and parole). Formal diversion programmes are becoming more common

in Australia. Two examples are the New South Wales drug court (Freeman et al., 2000) and the Magistrates' Early Referral to Treatment Programme (MERIT) (Reilly, Scantleton & Didcott, 2002). Although various diversion pathways exist, treatment for substance dependence is central and tailored to the individual. O'Callaghan et al. (2004) take the view that all drug diversion programmes are coercive. Certainly treatment compliance and progress are monitored to varying degrees and legal sanctions are likely to be more serious if the treatment option is rejected or if progress is unsatisfactory.

Research into Australian drug diversion programmes is increasing. Less is known, however, about how those legally coerced into treatment fare compared to those undertaking treatment on a more voluntary basis. One concern is that legal coercion undermines autonomy and therefore diminishes investment in treatment (Freeman, 2003; O'Callaghan et al., 2004). This has been a longstanding concern. McLellan and Druley (1977) found that court-ordered drug patients in a 90-day Pennsylvania rehabilitation programme were similar to voluntary patients in terms of engagement in treatment and prognosis as judged by staff. Hall (1997) came to a similar conclusion based on his review of studies in the United States comparing coerced versus voluntary heroin-dependent patients. Hall drew attention, though, to the datedness of the studies and their questionable applicability to the current Australian context. Desland and Batey (1992) found similarities and differences in an Australian prospective study of self-referred and diverted heroin offenders. The diversion programme, however, was limited to three assessment interviews, and follow-up focused on demographics and drug use rather than psychological functioning. Freeman (2001, 2003) found that New South Wales drug court participants prior to programme entry scored better

than voluntary clients on several dimensions of an omnibus measure of health and well-being. The comparison data, however, were collected from clients entering a voluntary methadone maintenance programme in another state and 6 years earlier. The current study compares voluntary versus legally coerced clients in a single residential treatment programme on measures of psychological functioning at three times during the first 75 days. Improvements in psychological health are likely to be early indicators of recovery important in their own right, but even more so as precursors for ongoing engagement in lifestyle change (Simpson & Joe, 2004).

Method

Participants

A sample of 80 men was recruited from Benelong's Haven in northern New South Wales, Australia. This alcohol and drug centre has provided rehabilitation services for three decades. It has specialized in responding to the addiction needs of Indigenous peoples although non-Indigenous clients are also served. Some aspects of treatment at Benelong's Haven have been described by Chenhall (2006, 2007). Typically, this therapeutic community has 35–50 residents in treatment at any one time and existing programme statistics show that the median length of stay is 78 days. Because relatively few female clients undergo treatment in this facility, only men were recruited for the current study. Their ages ranged from 19 to 63 years ($M = 34.10$ years, $SD = 9.50$). The sample consisted of 38 voluntary residents and 42 residents who were under various degrees of legal coercion. The latter residents were sent to the treatment facility by a variety of routes such as solicitors prior to court appearance, the Magistrates Early Referral into Treatment programme, the judiciary on court adjournment pending treatment

outcome and via Supreme Court bail. All residents in the legally coerced group had current criminal charges whereas voluntary residents did not. Coercion to treatment was typically for an initial 3-month period.

Most residents met the criteria for substance abuse disorder (American Psychiatric Association, 1994) as judged by the centre's medical practitioner and senior alcohol and drug counsellors. The key symptom was continued use of mood-changing substances despite problems related to the use of these substances. Based on self-reports, 94% smoked tobacco, 50% were heroin and/or amphetamine users, 81% were cannabis users and 80% used alcohol. Nearly all participants described an escalating course of substance use from the ages of 12–14 years. Of the 80 participants, 45% identified as indigenous, 29% had not been employed at all in the previous 6 months, 63% had lived in more than one place in the last 6 months, 35% had recently dealt drugs, and 34% reported a recent history of violent crime. Mean level of education was 10.1 years and several participants were judged as functionally unable to read or write. There was only one statistical difference between voluntary and legally coerced residents on these broad demographic characteristics. More of the legally coerced (50%) than voluntary (16%) reported violent crime, $\chi^2(1, \text{continuity correction}) = 8.97$, $p = .003$.

Materials and Measures

Five omnibus self-report measures were chosen to assess multiple dimensions of psychosocial functioning.

Opiate Treatment Index

The Opiate Treatment Index (OTI) (Darke, Ward, Hall, Heather, & Wodak, 1991) is a standardized instrument used widely in researching patterns of drug use. Subscales

addressing (a) demographics, (b) drug use, (c) social functioning and (d) crime were used to develop a baseline profile of each participant. Response alternatives were modified to provide dichotomous data, which were sufficient for the study and reduced administration time.

Brief Symptom Inventory-53

The Brief Symptom Inventory (BSI) (Derogatis, 1993) is a 53-item self-report instrument designed to screen for a broad range of psychological problems on nine symptom scales: (a) Somatization, (b) Obsessive–Compulsive, (c) Interpersonal Sensitivity, (d) Depression, (e) Anxiety, (f) Hostility, (g) Phobic Anxiety, (h) Paranoid Ideation and (i) Psychoticism. Respondents rate their psychological functioning for the past week on a 5-point scale ranging from *not at all* to *extremely*. The nine subscales make up three global indices of distress: (a) the Global Severity Index (GSI) is an overall measure of psychological distress calculated as the mean item response across all items; (b) the Positive Symptom Total (PST) counts all non-zero responses to determine the total number of symptoms reported regardless of degree; and (c) the Positive Symptom Distress Index (PSDI) is the sum of the values of non-zero responses divided by the PST to indicate the average level of distress experienced. The BSI has been used in other studies investigating substance abuse and psychological distress (Jackson & Sher, 2003). The manual reports alpha coefficients for all scales from .71 to .85. Administration time is approximately 10 min.

Depression Anxiety and Stress Scale-21

The Depression Anxiety and Stress Scale-21 (DASS) (Lovibond & Lovibond, 1995) is a 21-item self-report measure of depression, anxiety and stress. The DASS-21 is highly correlated to the 42-item version

and reduces administration time to approximately 5 min. There are seven items per scale. Respondents indicate the degree to which they have experienced various symptoms over the past week on a 4-point scale. The manual reports scale reliability alpha values for Depression (0.81), Anxiety (0.73) and Stress (0.81).

Stages of Change Scales

The Stages of Change Scales (SOCS) (McConaughy, Prochaska, & Velicer, 1983) is a 32-item instrument derived from the Prochaska and DiClemente (1982) model of therapeutic change. There are four 8-item subscales: (a) Pre-contemplation representing resistance to change, (b) Contemplation representing interest in change and the means of achieving change, (c) Action representing involvement and effort at change, and (d) Maintenance representing investment in continuing change in spite of setbacks. Item responses are provided on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Internal consistency alpha coefficients for the subscales range from .79 to .84 (McConaughy, DiClemente, Prochaska, & Velicer, 1989). The SOCS was sourced from the University of Rhode Island website, where permission for its use was granted electronically by James O. Prochaska.

Interpersonal Reactivity Index

The Interpersonal Reactivity Index (IRI) (Davis, 1980) was used to measure aspects of empathy. It is available on the public domain with free access and consists of 28 items that assess cognitive and affective dimensions of empathy. On a scale from 0 (*does not describe me well*) to 4 (*describes me very well*), respondents indicate how well their thoughts and feelings are reflected by scenarios such as "I believe that there are two sides to every question and

try to look at them both" and "I often have tender concerned feelings for people less fortunate than me". Factor analysis has indicated two cognitive factors (perspective taking, fantasy) and two affective factors (empathic concern, personal distress). Alpha coefficients have been reported to range from .70 to .78 (Davis, 1980). In the present study only seven items for "empathic concern" and seven items for "perspective taking" were administered. These were the most relevant and meaningful subscales for participants in the study and limit the impact of psychometric shortcomings that have been found with offender populations (Bevan, O'Brien-Malone, & Hall, 2004).

Procedure

The study received approval from the university Ethics in Human Research Committee and the directors of the residential facility where the study was conducted. A total of 10–15 days after entering the programme, male residents were asked to take part in the study and written informed consent was obtained from participants. Questionnaires were administered in shuffled order and completed in a single session. The data were collected by the first author with occasional help from two assistants. This data collection stage was referred to as Time 1. Participants who remained were asked to complete again all questionnaires except the OTI, at 35–40 days (Time 2) and 70–75 days (Time 3) after entry into treatment. Some participants who struggled with reading were read aloud parts or all of the questionnaires. Information provided for the study was not shared with treatment staff. The data were collected during 2004 and 2005.

Over the period of the study, the treatment programme was delivered as usual within the milieu of a therapeutic community. It combined a philosophy of reconnecting spiritual relationships with

principles of Alcoholics Anonymous. Key programming included public speaking to share life stories, psychoeducational and psychotherapy groups and optional individual counselling. The first author, as the facility psychologist, was a key treatment provider of both group and individual counselling drawing strongly on motivational interviewing (Miller & Rollnick, 1991) and cognitive behaviour therapy for addiction treatment (Litt, Kadden, Cooney, & Kabela, 2003). The first author provided treatment services as usual throughout the research period. No measures of treatment fidelity or formal treatment monitoring strategies were undertaken for the current study.

Results

The dependent variables for this study were scores obtained on four omnibus psychological questionnaires (BSI, DASS, SOCS, IRI). These measures were analysed for two subsamples of participants (voluntary vs. legally coerced) over three successive data collection times. The distributions of dependent variable scores were examined using various assumption-testing procedures outlined by Pallant (2005). There were frequent departures from normality often related to scores being either positively or negatively skewed. The F test is robust to non-normality if due to skewness rather than outliers (Tabachnick & Fidell, 1996). Sample size close to 30 provides further robustness against departures from normality (Pallant, 2005) and this was the case for most of the data at Time 1 and Time 2. Subscales within the four measures were typically highly intercorrelated although few were above $r = .8$ at Time 1. Multicollinearity, however, was more frequent with smaller sample sizes over time, especially for the BSI and DASS. Taking this into account, the data were analysed using parametric statistics and conservative alpha levels, which were

likely to be robust for most of the analyses. The parametric analyses were complemented by analysis of reliable change at the individual participant level.

Time 1 Results

Table 1 shows baseline descriptive statistics for the voluntary ($n = 38$) and coerced ($N = 42$) subgroups combined because the groups were similar at Time 1 on the psychological measures. Statistical analyses with group (voluntary vs. coerced) as a fixed factor, indicated only one significant difference. This multivariate (MANOVA) effect occurred for the Stages of Change subscales, $F(4,75) = 3.06$, $p = .02$, Wilks' lambda = .86. Follow-up univariate analyses (ANOVA) showed that the legally coerced subsample scored higher ($M = 18.95$, $SD = 7.38$) than the voluntary subsample ($M = 14.90$, $SD = 5.30$) on the Precontemplation scale, $F(1,78) = 7.83$, $p < .01$. This indicates that coerced residents were somewhat more inclined to dismiss the need to address their problems.

The psychological baseline data for the total sample of residents were compared with normative data from various sources (Table 1) using independent t tests. On the BSI (subscales and global indices) and on the DASS subscales, the study sample had significantly higher scores than the comparison sample ($p \leq .01$). SOCS scores were similar except that the current sample had a significantly higher mean score on the Action subscale ($p \leq .01$). The study sample showed lower empathic concern and perspective taking scores than the normative sample for the IRI ($p \leq .01$). In summary, at approximately 2 weeks into treatment, the participants of this study as a group were showing a broad range of symptoms of emotional distress and psychological dysfunction, but there were indications of motivation to seek a process of change.

Table 1. Psychological Measures for the Total Sample ($N = 80$) at Time 1.

MEASURE (ITEMS)	SCORE RANGE	SAMPLE		NORMS ¹	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
BSI					
Somatization (7)	0–4	1.04	0.94	0.23	0.32
Obsessive–compulsive (6)	0–4	1.81	1.07	0.37	0.41
Interpersonal sensitivity (4)	0–4	1.62	0.99	0.24	0.38
Depression (6)	0–4	1.43	1.00	0.21	0.33
Anxiety (6)	0–4	1.34	0.94	0.26	0.31
Hostility (5)	0–4	1.28	0.99	0.34	0.40
Phobic anxiety (5)	0–4	0.89	0.90	0.11	0.25
Paranoid ideation (5)	0–4	1.53	0.89	0.33	0.41
Psychoticism (5)	0–4	1.43	0.92	0.15	0.27
Global severity index (53)	0–4	1.37	0.81	0.25	0.24
Positive symptoms distress (53)	0–4	1.97	0.62	1.27	0.39
Positive symptoms total (53)	0–53	34.26	13.44	10.06	8.35
DASS²					
Depression (7)	0–42	16.60	11.75	6.55	7.01
Anxiety (7)	0–42	13.93	9.81	4.60	4.80
Stress (7)	0–42	18.59	11.19	9.93	7.66
SOCS					
Precontemplation (8)	8–40	17.03	6.75	16.16	5.36
Contemplation (8)	8–40	34.09	4.85	34.24	4.16
Action (8)	8–40	33.91	4.59	31.28	4.96
Maintenance (8)	8–40	30.86	6.15	29.28	5.52
IRI					
Empathic Concern (7)	0–28	16.71	4.87	19.04	4.21
Perspective Taking (7)	0–28	15.01	5.08	16.78	4.72

Notes. BSI = Brief Symptom Inventory; DASS = Depression Anxiety Stress Scale; IRI = Interpersonal Reactivity Index; SOCS = Stages of Change Scales.

¹Comparative data: BSI = 361 men (non-patients) (Derogatis, 1993); DASS = 1044 men predominantly non-clinical (Lovibond & Lovibond, 1995); IRI = 579 male university students (Davis, 1980; Shanafelt et al., 2005); SOCS = 323 adult male and female mental health outpatients (McConaughy et al., 1989).

²DASS-21 scores multiplied by 2 to correspond with the 42-item version.

Time 2 Results

Twenty-four participants (12 voluntary, 12 coerced,) left in the first 5 weeks of treatment, leaving 56 participants (26 voluntary, 30 coerced) at Time 2. There was no statistical association between dropout rate and voluntary versus coerced status. The stayers and leavers were similar on gross demographic data regarding employment, indigenous status, self-reported criminal activity and types of substance use. The leavers ($M = 30.13$ years) were younger than the stayers ($M = 35.8$ years), $t(78) = 2.53$, $p = .01$. Also, significantly more leavers (79%)

than stayers (55%) reported living in one place, as opposed to multiple places, over the previous 6 months (Fisher's exact test = 4.01, $p < .05$).

Multivariate and univariate analysis of variance were used to compare the stayers and leavers on each of the psychological measures collected at Time 1. Admission status (voluntary vs. legally coerced) was also used as a fixed factor to see whether this interacted with treatment engagement at Time 2. The stayers and leavers were the same on all of the dependent measures at baseline. Admission status indicated only one significant interaction. Specifically, among those leaving by Time 2, coerced

residents were more anxious than voluntary admissions on the DASS measured at Time 1. No statistical difference in Time 1 anxiety existed for legally coerced versus voluntary stayers (univariate interaction effect), $F(1,76) = 6.03$, $p = .016$ (partial $\eta^2 = .07$, effect size medium).

For those continuing in treatment, the data at Time 1 and Time 2 constituted a mixed between-within-subjects design (Pallant, 2005). The between-subject factor was the voluntary versus legally coerced status and the within-subject factor was data from the two time periods. Split-plot analysis of variance (SPANOVA) was conducted for each subscale of the four omnibus psychological measures using a conservative alpha level of .01 due to the multiple tests. There were no significant

interactions, which indicated that the pattern of psychological measures over time was not different for the voluntary and legally coerced groups. Consequently, Table 2 shows means and standard deviations for the 56 stayers at Time 1 and Time 2. On each of the nine BSI subscales, the BSI global indices and the three DASS subscales there was a significant main effect for time (Wilks' $\lambda = .378-.751$), $F(1,54) = 17.92-87.39$, $p < .001$. These changes in the direction of improvement are considered to be very large effect sizes (partial $\eta^2 = .249-.622$). On the SOCS there was a main effect for time on the maintenance subscale, with scores for both the voluntary and coerced subgroups groups showing a decrease from Time 1 to Time 2 (Wilks' $\lambda = .759$),

Table 2. Psychological Measures at Time 1 and Time 2 ($N = 56$) and at Time 3 ($N = 38$).

MEASURE	TIME 1		TIME 2		TIME 3	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Brief Symptom Inventory						
Somatization	1.13	0.95	0.59	0.54	0.44	0.46
Obsessive compulsive	1.94	1.12	1.14	0.87	0.76	0.51
Interpersonal sensitivity	1.72	1.01	1.00	0.76	0.67	0.50
Depression	1.55	1.06	0.79	0.79	0.54	0.46
Anxiety	1.45	0.99	0.77	0.73	0.45	0.45
Hostility	1.23	0.99	0.78	0.77	0.41	0.52
Phobic anxiety	0.94	0.90	0.47	0.67	0.16	0.28
Paranoid ideation	1.55	0.93	0.96	0.70	0.62	0.55
Psychoticism	1.53	0.96	0.89	0.73	0.55	0.44
Global severity index	1.45	0.84	0.83	0.65	0.52	0.37
Positive symptoms distress ¹	2.01	0.64	1.41	0.47	1.21	0.27
Positive symptoms total	35.68	13.50	28.29	14.71	21.37	11.62
Depression Anxiety Stress Scale						
Depression	16.89	11.50	11.57	9.56	6.32	5.17
Anxiety	14.50	9.87	8.68	7.96	6.21	4.74
Stress	19.27	10.31	13.39	9.69	9.79	5.95
Stage of Change Scale						
Precontemplation	17.11	6.38	16.66	4.72	15.89	3.34
Contemplation	34.50	4.71	33.59	3.35	33.53	4.52
Action	33.93	4.70	32.77	4.23	34.00	3.80
Maintenance	31.41	5.81	29.25	5.07	30.24	4.56
Interpersonal Reactivity Index						
Empathic Concern	16.30	5.12	16.25	4.25	16.39	4.55
Perspective Taking	14.63	5.08	14.96	3.79	14.63	4.32

Note. ¹ $N = 55$ at Time 2 and 37 at Time 3.

$F(1,54) = 17.11, p < .001$ (partial $\eta^2 = .241$). There was no significant main effect for time or subgroup on the IRI.

Time 3 Results

Eighteen participants (four voluntary, 14 coerced) left after Time 2 and before Time 3 data were collected. This left 38 participants (22 voluntary, 16 coerced) at Time 3. There was a significant association between dropout rate and voluntary versus coerced status, $\chi^2(1, \text{continuity correction}) = 4.90, p = .027$. Almost half (47%) of the coerced residents left between Time 2 and Time 3, but only 15% of the voluntary residents left in the same period. The stayers and leavers were similar on gross demographic data regarding employment, places lived, indigenous status, self-reported criminal activity and types of substance use.

The leavers and stayers between Time 2 and Time 3 were also compared on the psychological dependent measures collected at Time 2. Voluntary versus coerced status was not included as a fixed factor because this would have seriously reduced subsample size for some of the analyses. Multivariate and univariate analyses consistently indicated that little discriminated between the leavers and the stayers. There was a tendency for the stayers to have higher IRI empathy scores at Time 2 ($F = 4.49, p < .05$, partial $\eta^2 = .08$).

As with the analyses of dependent measures from Time 1 to Time 2, SPANOVA was used to examine the psychological measures from Time 2 to Time 3. As before, the between-subject factor was the voluntary versus legally coerced status of residents. Using a conservative alpha level ($p < .01$), there were no significant interactions between voluntary/coerced status and time on any measure. Interactions for two of the SOCS scales (Contemplation, Maintenance), however, were close to significant ($p < .05$), with mean scores suggesting that there may be some differential increase on

these scales for coerced residents. There was no significant difference between coerced versus voluntary status on any other measures. There was a clear pattern of significant effects over time (Time 2–Time 3), however, on the BSI and DASS. With the exception of somatization and depression on the BSI, all other subscales and the global indices showed significant improvements over time (Wilks' $\lambda = .574-.788$), $F(1,36) = 9.41-26.70, p < .005$, and the effect sizes were large (partial $\eta^2 = .212-.426$). The change over time on the somatization and depression subscales was in the same direction ($p < .05$). On the DASS, there was a significant improvement over time on the depression and stress subscales (Wilks' $\lambda = .783$ and .791), $F(1,36) = 9.96$ and $9.51, p < .005$ (partial $\eta^2 = .217$ and $.209$). The change on the DASS anxiety subscale over time was in the same direction ($p < .05$). There were no significant changes over time on the remaining SOCS and IRI subscales. Table 2 shows the means and standard deviations on the psychological measures for the combined group of voluntary and coerced residents at Time 3.

Reliable and Clinically Significant Change

The changes in psychological measures over time described above are based on group mean scores. As such, they do not show how individual residents may have changed or not changed, and whether residents who did change recovered from dysfunctional to normal levels. It is recommended that group analyses be supplemented by individual change analyses (Jacobson, Roberts, Berns, & McGlinchey, 1999; Jacobson & Truax, 1991). To this end, we examined reliable change and clinically significant change for the 38 individuals remaining in treatment at Time 3. Reliable change refers to an improvement in scores over time that is beyond that expected due to measurement

error. Clinically significant change refers to reliable change that moves a participant from a clinically abnormal to a normal range on the psychological measure. These indices were calculated using standard formulae (Atkins, Bedics, McGlinchey, & Beauchaine, 2005; Jacobson & Truax, 1991) for the GSI of the BSI and the three DASS scales. Difference scores between Time 1 and Time 3 were used for each individual in our Time 3 sample. Statistics from the normative data referred to in Table 1 were used to calculate the required standard error terms. Test-retest reliability was used for the GSI and coefficient alpha for the DASS subscales. Reliable change occurred if the individual changed more than the standard error of difference multiplied by 1.96 (95% confidence). Clinically significant change was deemed to have occurred if reliable change occurred and the individual's Time 1 score was in a clinical range (95 percentile relative to the norm group) and the Time 3 score was in the normal range (<95 percentile).

The results showed that substantial numbers of those staying in treatment were improved after approximately 10 weeks. Excluding a few residents whose initial scores were too low to register reliable change, most satisfied the criterion for reliable change on the GSI (89%) and on the DASS (Depression = 68%, Anxiety = 70%, Stress = 56%). Among those for whom recovery was possible, most also satisfied the more rigorous criteria for clinically significant change on the GSI (55%) and the DASS (Depression = 94%, Anxiety = 68%, Stress = 89%). Although numbers were low for chi-square analyses, comparisons were made on these indices for voluntary versus coerced residents. Predominantly there were no differences, except that relatively more voluntary than coerced residents showed reliable change on the GSI and DASS depression scales ($p < .05$).

Discussion

This study used self-report measures of psychological functioning to track the progress of voluntary and coerced clients in a residential substance abuse programme. Data were collected at three times over 75 days. Of 80 residents assessed in the first 10–15 days of programme entry, 56 remained to complete measures after approximately 5 weeks and 38 residents remained 10–11 weeks following their admission. Comparisons were made for voluntary versus coerced residents at, and across, these times and for those staying and leaving treatment.

The results showed that voluntary and coerced cohorts were more similar than different. At programme entry they were the same on measures of psychological distress and dysfunction (BSI, DASS), empathy and perspective taking (IRI), and on three of four stages of change (SOCS). At the 5-week mark, voluntary versus coerced status did not differentiate those staying or leaving treatment, and the pattern of change on the self-report measures over the intervening 3–4 weeks was the same. For those staying in treatment up to 10–11 weeks, voluntary and coerced clients showed the same pattern of change on all measures other than two scales of the SOCS (contemplation and maintenance). The analysis of reliable and clinically significant change at the individual level from Time 1 to Time 3 also showed little difference between voluntary and coerced clients.

These results suggest that some treatment programmes that accept voluntary and legally coerced clients may expect these cohorts to have a similar psychological presentation upon programme entry and throughout the early stages of residential treatment. Of course, local validation is the best way to proceed because there is much variability in diversion processes, substance abuse patterns and treatment programmes

(Hall, 1997; O'Callaghan et al., 2004). Also, the confluence of similarities in the current study was limited to several self-report psychological measures and some broad demographic information over a period of 2–3 months. Collateral data and distal behavioural outcomes should also be considered in profiling drug-dependent cohorts in treatment. Nevertheless, psychosocial functioning during early treatment is considered important to attend to for treatment engagement and subsequent outcomes (Simpson & Joe, 2004).

The differences between voluntary and coerced client on the psychological measures were not as consistent or compelling as the similarities. Consistent with their legal status, more of the coerced residents reported a recent history of violent crime. At Time 1, coerced clients scored higher on the Precontemplation scale, implying that they were more inclined to dismiss the need for change. For example, one of the seven Precontemplation items reads "As far as I am concerned, I don't have any problems that need changing". A common concern is that legally coerced clients will have less motivation to change because autonomy is undermined (O'Callaghan et al., 2004). But on the other SOCS subscales at Time 1, and on all SOCS subscales from Time 1 to Time 2, there was no difference between voluntary and coerced clients. At Time 3 there was a trend for coerced clients to score higher on Contemplation and Maintenance. These mixed and tentative results suggest that the dynamics of change are a promising line of inquiry. More detailed and complex investigations of stages are required (e.g., Hemphill & Howell, 2000; Schorr et al., 2008) to determine whether there are clear and practical implications for voluntary versus coerced clients in alcohol and drug treatment. More voluntary than coerced residents improved from Time 1 to Time 3 on the GSI (BSI) and the Depression scale of the DASS. There were no differences on the more stringent and

useful measure of clinically significant improvement (recovery) between voluntary and coerced clients.

This study provided some insights into factors that may relate to ongoing engagement with treatment versus dropping out. In this respect, demographics and admissions status were more noteworthy than the psychological measures. Specifically, the 24 residents who left in the first 5 weeks were on average younger (30 years) than the 56 clients staying in treatment (36 years). Leavers at this time were also more likely to have lived in one place in the previous 6 months than in two or more places. Thus, younger clients who have the prospect of return to stable accommodation may be ambivalent about engagement with residential treatment. Conversely, stable living arrangements in the treatment facility may aid retention for those who have lacked this in the community (Brunette et al., 2004). These demographic risk factors, however, are only crude pointers to a variety of individual scenarios that may incorporate a common dynamic for dropping out. Of the 80 clients who commenced participation in treatment and this study, only 38 remained at the 10–11-week mark. This represents an overall dropout rate of 52.5%. Of the 18 residents who left between Time 2 and Time 3, most were coerced into treatment. Overall, 58% of the voluntary residents entering treatment remained at the 10–11-week mark but only 38% of the coerced clients. Retention rates vary widely in treatment programmes and comparisons may be more misleading than informative due to programme, client and time factors (Brunette et al., 2004; Freeman, 2003). The major implication of the current study is that the dropout rate of coerced clients should be explored in depth, particularly in relation to events and dynamics after the first 5–6 weeks in treatment.

It was very clear from the statistical group data of this study and from

individual analyses that change occurred over time for residents in Benelong's Haven treatment programme. It was also clear that residents reported change in the cognitive, emotional and behavioural symptoms typically associated with psychological distress and clinical disorders (i.e., scales on the BSI and DASS). Change occurred for residents staying in treatment for approximately 5 weeks (Time 1–Time 2) and further change occurred for those staying 5 more weeks (Time 2–Time 3). In fact, for residents scoring in the clinical range at Time 1, between 50% and 90% reported clinically significant recovery to normal levels on these measures by Time 3. As encouraging as these results are, it cannot be concluded that the change is due to the specific treatment programme. Only randomized control trials allow conclusive statements about the efficacy of treatment ingredients for specific psychological disorders (Levant & Hasan, 2008). Thus, non-treatment components such as demand characteristics, or non-specific effects such as improved living conditions, may be responsible for self-reported change. As for the other psychological measures, we have already noted the value of further investigation of stages of change (SOCS) for voluntary versus coerced clients. The decrease in maintenance scores for all clients from Time 1 to Time 2 further supports this view, although little can be read into this result at this point. The absence of significant results related to the IRI measure of empathy and perspective taking does not justify ignoring the value of the empathy construct in substance abuse treatment, particularly as it may relate to aggression and violence. Although the IRI is widely used in empathy research, recent studies (Bevan et al., 2004; Lauterbach & Hosser, 2007) point to shortcomings related to comprehensibility and negatively worded items that were evident for some participants in the current study.

In conclusion, this study investigated psychological change in voluntary and coerced clients of a residential alcohol and drug treatment programme. Overall, the results showed little that differentiated the psychological profile of these cohorts early in treatment or subsequently over ensuing weeks. Both types of residents, at the group and at an individual level, reported substantial improvements in their psychological state with time. Such improvements are encouraging for the Benelong's Haven treatment programme. Empirically though, improvement cannot be attributed to the programme as a whole or to specific intervention components because this study was not designed as a clinical trial with its attendant methodological requirements (Becker & Curry, 2008). In contrast, this study may allay some concerns about the impact of coercion on residents during the early stages of drug and alcohol treatment. Yet, several considerations temper such a view. First, coerced clients in this study did leave treatment at a much higher rate than voluntary clients after the first 5–6 weeks of treatment. Second, the coerced status of residents in this programme was not explored beyond having current criminal charges and being sent to treatment via various legal routes. Winick (2008) points out that the concept of coercion has both legal and psychological dimensions. Thus, there exist varying degrees of legal coercion that may or may not be perceived as coercive. For that matter, those who admit themselves voluntary to treatment are often under various social pressures that make them feel coerced. Subjective understandings of treatment involvement need to be pursued in this field. Finally, the current study in no way investigated the interaction between treatment staff and residents. Therapeutic conditions that validate clients and enhance their autonomy are thought to minimize any adverse effects of coercion to treatment (Winick). Real differences in the

motivation and psychological functioning of voluntary versus coerced clients may be resolved due to such dynamics that deserve further study.

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