Outcomes for Dutch patients at Castle Craig Hospital

the 2011 evaluation for all Dutch patients admitted between 06.08.08 to 09.11.09

Independent analysis of outcome data
Christo Research Systems

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Summary of findings

- Seventy seven drug and 72 alcohol dependent patients from the Netherlands entered Castle Craig Hospital between 6th August 2008 to 9th November 2009 and stayed in treatment for more than 1 day.

- Forty eight percent of patients were referred from 'non-professional' sources (e.g. self, family, AA, etc.) and 43% from 'professional' sources (e.g. G.P., Psychiatrist, etc.). 'Non-professional' referrals were a little more likely to complete treatment.

- Most patients were alcohol or cocaine addicts.

- Patients were generally quite dysfunctional at intake. The average intake CISS total score of the 149 patients was 9.3 and their greatest problems were with drug or alcohol use, lack of support, lack of occupation and psychological problems.

- Drug dependent patients tended to have greater problems with social functioning and viral risk.

- Patients were similar in levels of dysfunction to drinkers and drug users attending outpatient services (based on the CISS comparison scores see Appendix).

- The patients' average wait between referral to treatment entry was 7.2 weeks.

- 66% of patients completed treatment, 24% of patients prematurely self-discharged against medical advice, 7% of patients were prematurely discharged for rule violations, and 3% of patients left prematurely with staff agreement.

- The average treatment duration for patients completing treatment was 19 weeks, and the average treatment duration for prematurely discharged patients was 8 weeks.

- Premature treatment discharge was more likely among patients also diagnosed with a personality disorder.

- Follow-ups were successfully completed on 109 of the 149 patients (73.2% response rate). Thirty nine patients could not be contacted and one patient had died.

- The average follow-up period was 62 weeks after discharge.

- 89% of followed-up patients improved, 6% remained the same, 6% got worse.

- 64% of patients completing treatment do well, whereas fewer (20% to 40%) patients taking premature discharges (for whatever reason) have a good outcome.

- Good outcome was predicted by
  - Being male
  - Completion of treatment
  - Longer treatment duration
  - Not being a primary opiate/oid user
  - Fewer occupational problems

- The average intake CISS score of the 109 followed-up patients was 9.6 and the average follow-up CISS score was 3.9 indicating a highly significant improvement in general functioning.

- Reductions in drug / alcohol use at follow-up were accompanied by improvements in all other CISS domains.

- Even those who were not totally abstinent at follow-up appeared to have benefited from their experience in treatment, probably by gaining a period of respite during which to recover from the consequences of their excessive drinking or drug use.

- The following success rates are conservatively based by including all 149 patients on the assumption that the 40 patients not followed-up (response rate = 73.2%) showed no improvement or otherwise had poor outcomes.
  - Being totally abstinent from all drugs or alcohol at follow-up
    43.6% (*n* = 65)
  - Achieving low problem severity at follow-up (CISS < 6, see appendix)
    53.7% (*n* = 80)
  - Showing any reduction in measured levels of dysfunction
    66.4% (*n* = 99)

However the success rates might be higher because some of the missing patients would not have been contactable due to having recovered and being in full time occupation.

- The following success rates are thus more liberally based by including the 1 patient that died but not including the other 39 patients that could not be contacted for follow-up (*n* = 110).
  - Being totally abstinent from all drugs or alcohol at follow-up
    59.1%
  - Achieving low problem severity at follow-up (CISS < 6, see appendix)
    72.7%
  - Showing any reduction in measured levels of dysfunction
    90.0%

General approach

Castle Craig Hospital provides an abstinence oriented residential treatment for alcohol or drug dependent individuals. It uses an established treatment model developed in the US around 1950 and first imported to the UK in 1974 (Cook, 1988a). Outcomes generated by this approach are very good (Cook, 1988b) and have been shown to be at least equal to and in some cases better than other commonly used treatments for substance misuse (Project MATCH, 1997; Ouimette et al, 1997; Longabaugh et al, 1998).

It is an intensive psychologically oriented approach consisting of regular group work, one to one counselling, lectures and written assignments. Many similar therapeutic communities are well established throughout the UK and their programme facilitates engagement with the independent free after care resource provided by Alcoholics Anonymous and Narcotics Anonymous (AA & NA) groups. Regular attendance of AA and NA has been shown to be associated with reduced drug or alcohol use (Emrick, 1987; McLatchie & Lomp, 1988; Alford et al, 1991; Christo & Franey, 1995; Gossop et al, 2003), improved psychological health (Christo & Sutton, 1994; DeSoto et al, 1989; DeSoto et al, 1985; McCown, 1989; McCown, 1990), and with improved physical health (Mann et al, 1991).

Services offered

Castle Craig Hospital offers detoxification from alcohol, tranquillisers, or opiates. Patients are encouraged to engage with all aspects of the programme during detoxification because it serves as a useful distraction from withdrawal symptoms and assists in their orientation. Patients are also assessed to identify specific medical (e.g. liver dysfunction), psychological (e.g. cognitive deficits, anxiety, abuse or traumatic events), or psychiatric (e.g. dual diagnosis, suicide risk, epilepsy) problems that may need to be addressed in their individual care plans.

The first phase of treatment includes comprehensive assessment, detoxification, stabilisation, treatment planning and intensive individual and group psychotherapy. The duration of this phase is about six weeks. Therapy staff employ a full range of psychotherapeutic approaches depending upon their training and interests (e.g. Twelve Step Facilitation, Rational Emotive Behavioural Therapy, Cognitive Behavioural Therapy, Reality Therapy, and Transactional Analysis).

This phase continues with a second phase of short to medium term treatment with a further duration of from 8 to 24 weeks. This additional period of treatment is especially suitable for those patients with co morbid psychiatric disorders such as personality disorder, depressive disorders, phobias, generalised anxiety, poor support networks or social functioning. Addiction complicated by a psychiatric diagnosis is generally associated with worse outcomes. Such patients have more complex needs and need longer in treatment. The treatment in the second phase remains intensive, continuing to address those factors which have an immediate bearing on relapse. As well as using the same elements found in the primary phase of treatment, this second phase of care also assists patients to re-integrate with society by focusing on practical

issues of occupation, and family problems.

Castle Craig Hospital can offer aftercare group therapy held in a number of locations in Scotland and in the Netherlands at Amsterdam and Den Haag. All clients are encouraged to attend one or more of these aftercare sessions weekly for a period of up to two years after completing their residential treatment.

Aims of treatment

- Detoxification and stabilisation, abstaining from alcohol and other drugs.
- Creating a therapeutic bond to facilitate engagement with support from staff, peers, and AA or NA.
- Separating from people, places and things that promote substance use and establishing a new social network that supports recovery.
- Identifying recurrent problems, resolving painful / traumatic memories.
- Stopping compulsive self-defeating behaviours that suppress awareness of painful feelings and irrational thoughts.
- Relapse warning sign identification and management strategies. Identifying past causes of lapse and appropriate future coping strategies.
- Learning how to manage feelings and emotions responsibly without resorting to compulsive behaviour or the use of chemicals.
- Identifying and changing dysfunctional core beliefs (about self, others, and the world) that promote the use of irrational thinking and create painful feelings and self-defeating behaviours.
- Learning to change maladaptive behaviour patterns developed during childhood in dysfunctional families of origin.
- Increasing self-esteem by feeling worthwhile to self and helping others, promoting engagement with society, dealing with practical problems and establishing meaningful occupation.

Outcome measures & methods

How outcome was measured

Outcome was measured by the Christo Inventory for Substance-misuse Services (CISS) which is a standardised, validated tool (Christo, Spurrell & Alcorn, 2000, Christo, 2000a) now commonly used in Scotland (Effective Interventions Unit, 2001), England & Wales (Audit Commission, 2002; Christo, 1999a,b,c; Christo, 2000b,c,d,e,f, Christo, 2001), and abroad (Christo & Da Silva, 2002). The CISS is a single page outcome evaluation tool completed by drug / alcohol service workers either from direct client interviews or from personal experience of their client supplemented by existing assessment notes. Its purpose is to elicit workers' impressions of their clients in a quick, quantitative, standardised and reliable way. The 0 to 20 scale consists of 10 items reflecting clients' problems with:

Social functioning	Criminal involvement
General health	Drug / alcohol use
Sexual / injecting risk behaviour	Ongoing support
Psychological functioning	Compliance
Occupation	Working relationships

These outcome areas are scored on a three point scale of problem severity (0 = none, 1 = moderate, 2 = severe), each point is illustrated with relevant examples for guidance. Thus, a CISS score of 0 would indicate no problems and a score of 20 would indicate severe problems in all outcome areas.

Evaluation procedure

CISS is incorporated as a regular part of Castle Craig Hospital's intake and follow-up procedures. Baseline CISS forms were completed by staff from information gathered at the first assessment. They were then completed again during follow-up interviews on average about 62 weeks after discharge from treatment. A table of relevant dates, CISS information and other data for all Dutch patients was delivered to Christo Research Systems for analysis.

Sample

The sample comprised of all patients from the Netherlands who entered treatment between 6th August 2008 to 9th November 2009 and stayed in treatment for more than 1 day. One hundred and forty nine patients met these criteria, attempts were made to follow up all of them and 109 patients (73.2%) were successfully contacted in order to obtain the detailed information presented below. This evaluation thus details the outcomes for the 109 patients (83 males, 26 females) who were followed-up.

Findings regarding all 149 patients

Statistical information

- ***n*** indicates the number of individuals contributing to each statistical sample.
- ***m*** indicates a mean value, all averages in this report are means.
- ***sd*** indicates a standard deviation, thus giving an idea of the spread of scores around the mean. (In a normal distribution, 68% of all data points lie plus or minus one sd about the mean.)
- ***range*** indicates the total range of values within a measured variable (minimum - maximum).
- ***t , f,*** χ^2 and ***U*** are statistical tests to show if groups are significantly different from each other.
- ***p*** indicates the level of significance of a statistical test, the smaller the better.

Gender

113 males	75.8 %
36 females	24.2 %

Nationality and ethnic origins: All 149 patients were Dutch nationals from the Netherlands.

Drugs of choice

72 patients using alcohol	48.3%	Alcohol 48.3%
57 patients using cocaine	38.3%	Drugs 51.7%.
9 patients using opiate/oids	6.0 %	.
5 patients using cannabis	3.4 %	.
4 polysubstance users	2.7 %	
2 patients using amphetamines	1.3 %	.

Secondary drugs of choice

Among the 72 drinkers, 36 of them had a secondary drug recorded as follows:
12 also using cocaine
9 also using polysubstances
7 also using nicotine (although the majority of patients also smoke nicotine)
5 also using cannabis
2 also using opiate/oids
1 also using sedatives

Among the 77 drug users, 53 of them had a secondary drug recorded as follows:
22 also using polysubstances
19 also using alcohol
5 also using cannabis
2 also using nicotine (although the majority of patients also smoke nicotine)
1 also using opiate/oids
1 also using sedatives

The above picture of polysubstance use illustrates why interventions targeting single drug types might sometimes prove ineffective. Castle Craig's therapeutic target is total abstinence from all recreational drugs including alcohol (but not including nicotine and caffeine).

Table 1, Gender distribution by drug type

	Alcohol dependent	**Cocaine dependent**	**Other**	Total
Females	21 (58.3%)	8 (22.2%)	7 (19.4%)	36
Males	51 (45.1%)	49 (43.4%)	13 (13.4%)	113
Total	72	57	20	149

Table 1 above illustrates a tendency for more of the females to be primarily alcohol dependent but this was found not to be statistically significant (χ^2 [2] = 5.5, p = .07).

Table 2, Average Age by Drug type by Gender

The patients' average age was 37.3 years (n = 149, sd = 10.5, *range* = 18 - 66)

	Alcohol dependent	**Cocaine dependent**	**Other**	Total
Females	50.5 yrs (n=21)	30.1 yrs (n=8)	33.9 yrs (n=7)	42.7 yrs (n=36)
Males	39.7 yrs (n=51)	32.4 yrs (n=49)	31.6 yrs (n=13)	35.6 yrs (n=113)
Total	42.8 yrs (n=72)	32.1 yrs (n=57)	32.4 yrs (n=20)	37.3 yrs (n=149)

As illustrated in table 2 above, females were generally older than males (t [45.5] = 3.0, p = .004). Drinkers tended to be older and cocaine users tended to be younger (f [2] = 25.7, p < .001).

Table 3, Psychiatric Diagnoses by Gender, Drug type, & treatment completion

Ninety seven of the patients had been formally diagnosed with another mental health condition in addition to their substance misuse.

Concurrent General Diagnosis	Detailed Concurrent Diagnoses	*N*	% female	% primary alcohol	% completed treatment
Nil		52	21%	46%	82%
Personality Disorders	Mostly Cluster B: Dramatic or Erratic Behaviours Borderline, narcissistic and antisocial	34	21%	47%	32%
Depressive Disorders	Mostly major depressive disorder, and some mood disorder and bipolar disorder	28	43%	68%	68%
Attention Deficit	Mostly attention deficit hyperactivity disorder, some with secondary mood disorders or personality disorders	18	6%	44%	72%
Anxiety Disorders	Post traumatic stress syndrome and social phobia	8	38%	25%	100%
Eating Disorder	Bulimia nervosa	3	67%	33%	100%
Gambling	Gambling problem	2	0%	100%	50%
Psychosis	Drug induced psychosis	2	0%	0%	0%
Other	Cognitive disorder, sexual dysfunction	2	0%	0%	0%
Total		149	24%	48%	66%

As illustrated in table 3 above; the overall proportion of female patients is 24% and a greater proportion of females than thus expected were found within the depression category. A lower proportion of females than expected were found within the attention deficit category. A higher than expected proportion of alcoholics was found within the depression category. So depression appeared more associated with females and alcohol use; and attention deficit disorder appeared more associated with males. It also appeared that patients with no concurrent mental health condition were more likely to complete treatment and those with personality disorder were more likely to leave treatment prematurely. However, there were too many categories with small cell counts to allow a meaningful statistical test.

Table 3a, Psychiatric categories, treatment duration and treatment completion

Detailed mental health diagnoses were collapsed into 'other diagnoses' and 'personality disorder' categories for the purpose of analysis.

Referral Type	*n*	%	Mean treatment duration (weeks)	% completed treatment
Nil	52	34.9	16.5	82.7
Other diagnoses	63	42.3	16.1	69.8
Personality disorder	34	22.8	10.6	32.4
Total	149	100	15.0	65.8

Mean treatment duration was shorter for 'personality disordered' patients (f [2] = 6.0, p = .003). They also had the smallest percentage treatment completion rate (χ^2 [2] = 23.9, p < .001).

Table 4, Referral sources

General practitioners referred the greatest proportion of patients. However, all non-professionally referred patients were instructed to get a referral letter from their GP, given that a GP referral is compulsory before treatment can begin.

Referral Source	Type of referral	*n*	%	% completed treatment
General Practitioner (GP)	professional	41	27.5	53.7
Self-referred	non-professional	38	25.5	71.1
Other	non-professional	19	12.8	73.7
Unknown	unknown	13	8.7	38.5
Professional	professional	11	7.4	54.5
Psychiatrist	professional	11	7.4	81.8
Family	non-professional	6	4.0	83.3
Ex-patient	non-professional	4	2.7	100
Alcoholics Anonymous	non-professional	2	1.3	100
Brave Mothers	non-professional	1	0.7	100
Friend	non-professional	1	0.7	100
Internet	non-professional	1	0.7	100
Safe house	professional	1	0.7	100
Total		149	100	65.8

Referral sources were not significantly related to age, gender, drug type, or time to enter treatment.

Table 4a, Referral types

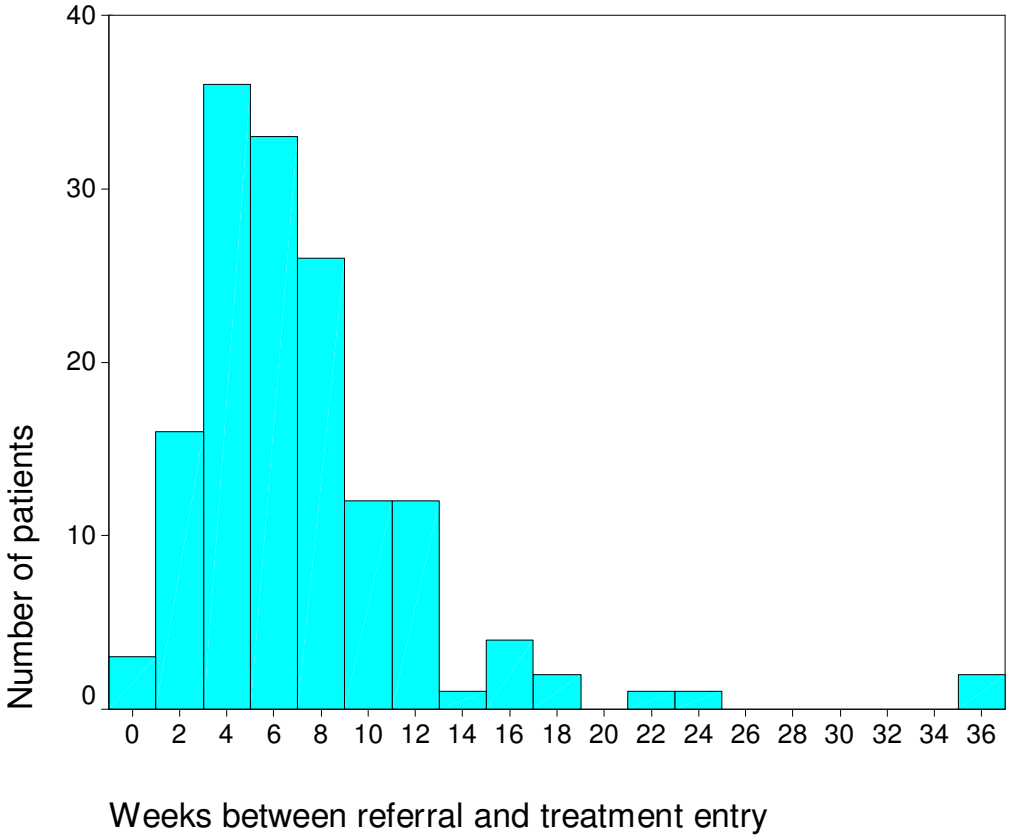
Detailed referral sources were collapsed into 'professional' and 'non-professional' categories for the purpose of analysis.

Referral Type	*n*	%	Mean treatment duration (weeks)	% completed treatment
Unknown	13	8.7	8.1	38.5
Non-professional	72	48.3	16.5	76.4
Professional	64	43.0	14.6	59.4
Total	149	100	15.0	65.8

Mean treatment duration was shortest for 'unknown' referrals and longest for referrals from 'non-professional' sources (f [2] = 5.6, p = .005). Percentage treatment completion was the least for 'unknown' referrals and the greatest for referrals from 'non-professional' sources (χ^2 [2] = 9.1, p = .01)

Time from referral to treatment entry (time to enter treatment)

Figure 1 below shows the patients' average time between referral and treatment entry was 7.2 weeks (*n* = 149, *sd* = 7.2, *range* = 0.1 – 35.9). Entry time was unrelated to gender, referral source, drug of choice, premature treatment discharge or eventual outcome.



The longer delays between referral to treatment entry were generally due to patients' issues such as:

- Two patients needed a long detoxification in a clinic in the Netherlands before treatment
- One patient had to go to prison between referral and assessment
- There were some problems with a patient's insurance company that needed to be solved before he could enter treatment
- One patient had doubts about the treatment and it took her a long time to make up her mind
- One patient failed to attend multiple appointments before the assessment could take place

Patients' problems at intake

The average intake CISS total score of the 149 patients was 9.3 (*sd* = 2.8, *range* 3 - 15) and there was no significant relationship between gender, drug of choice and average total score. This figure is indicative of an average level of dysfunction and suggests that these patients are similar in dysfunction to drinkers and drug users attending outpatient services (based on the CISS comparison scores for these groups, see Appendix). Patients' greatest problems were with drug or alcohol use, lack of support, lack of occupation and psychological problems.

For 77 drug dependent patients:

- 5.2 % of patients had low problem severity (CISS score 0 to 5)
- 76.7% of patients had average problem severity (CISS score 6 to 12)
- 18.2% of patients had high problem severity (CISS score 13 to 20)

For 72 alcohol dependent patients:

- 5.6% of patients had low problem severity (CISS score 0 to 4)
- 83.3% of patients had average problem severity (CISS score 5 to 11)
- 11.1% of patients had high problem severity (CISS score 12 to 20)

Figure 2, Baseline CISS item scores by drug type

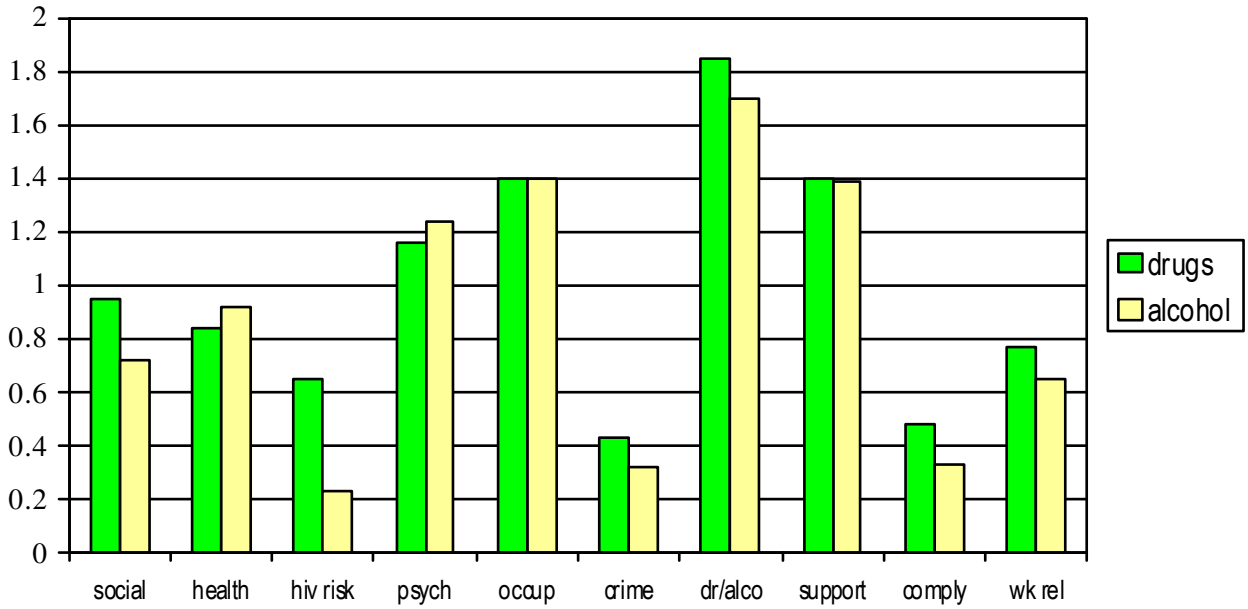


Figure 2 compares the average CISS item scores (0 to 2 scale) as assessed at intake between the 77 drug and the 72 alcohol dependent patients. The taller the bars in the figure, the greater the average degree of problem within the relevant CISS domain. Few differences emerged but drug dependent patients tended to have…..

- Greater social functioning problems ($U = 2300$, $p = .049$)
- Greater viral risk problems ($U = 1750$, $p < .001$)

Greater viral risk problems were also found among the male patients ($U = 1467$, $p = .004$) but no other gender differences emerged among the intake CISS domains.

Table 5, Insurance Companies

The greatest proportion of patients were insured with Achmea. However, insurance companies were not significantly related to age, gender, referral source, drug type, time to enter treatment, treatment completion, treatment duration, or outcome.

Insurance Company	*n*	%
Achmea	50	33.6
UVIT	36	24.2
AGIS	23	15.4
Multizor	15	10.1
Menzis	13	8.7
CZ groep	12	8.1
Total	149	100

Reasons for discharge from Castle Craig

- 98 Patients completed treatment 65.8 %

- 51 Patients left prematurely (incomplete treatment) 34.2 %
- of which…
  - 36 patients prematurely self-discharged against medical advice 24.2 %
  - 10 patients were prematurely discharged for rule violations 6.7 %
  - 5 patients left prematurely with staff agreement 3.4 %

The average treatment duration for patients completing treatment was 18.7 weeks (n = 98, sd = 7.4), it was significantly longer than the prematurely discharged patients' average treatment duration of 7.8 weeks (n = 51, sd = 6.1), (t [147] = 9.1, p < .001).

- There was no relationship between intake CISS scores and premature discharge.
- There was no relationship between age and premature discharge.
- There was no relationship between gender and premature discharge.
- There was no relationship between drug of choice and premature discharge.
- There was no relationship between insurance company and premature discharge.
- There was a relationship between referral source and premature discharge (see page 10).
- There was a relationship between concurrent personality disorder diagnoses and premature treatment discharge (see page 9).

Dropout rate during the first six weeks

Only 26 of the 149 patients (17.4%) stayed less than 6 weeks which is the usual duration of primary treatment.

Outcome

Attempts were made between 12.01.10 and 06.01.11 to contact all 149 patients via telephone, e-mail and post. Those who could be contacted were interviewed using the CISS outcome measure. Follow-ups were successfully completed on 109 of the 149 patients (73.2%). Thirty nine patients could not be contacted and one patient died.

In treatment outcome follow-up studies such as this one it is not unreasonable to assume that the majority of patients not accessible, will have relapsed.

Christo, Spurrell & Alcorn (2000) found a CISS cut-off score of 6 or less can be used to indicate "good outcome" for abstinence based treatment among drug users. This correctly identified 88% of outcomes where drug use was assessed only in month before follow-up, and 84% of outcomes where drug use was assessed over their entire six-month follow-up period. Alcoholics are generally expected to score one CISS point less than drug addicts.

So due to the large number of alcoholics in this sample, a conservative cut-off score of 5 or less was used to indicate "good outcome" for abstinence based treatment among the Castle Craig Patients.

The patients could thus be categorised under the following outcomes:

80 had a follow-up CISS score of 5 or less	53.7 %	Good outcome 54 %
29 had a follow-up CISS score of 6 or more	19.5 %	Poor outcome 46%
39 could not be contacted	26.2 %	.
1 patient died	0.7%	.

Table 6, Outcome by gender, treatment completion, and treatment duration

Outcome	**% Female (*n*)**	**% Completed (*n*)**	**Mean weeks in treatment**
Good (*n* = 80)	16.2% (23)	78.7% (63)	17.3 (*sd* = 8.1)
Poor (*n* = 69)	33.3% (13)	50.7% (35)	12.3 (*sd* = 8.6)
Significance	χ^2 [1] = 5.9, *p* = .015	χ^2 [1] = 12.9, *p* < .001	*t* [147] = 3.7, *p* < .001

Table 6 above illustrates that 'good outcome' is experienced by a smaller proportion of females and a greater proportion of those who completed their treatment; 'good outcome' is also associated with a longer stay in treatment.

Table 7, Outcome by CISS entry score, treatment entry time, and treatment duration

Outcome	Alcohol	Cocaine	Other drugs
Good (*n* = 80)	40	35	5
Poor (*n* = 69)	32	22	15
Total *n* = 149	72	57	20

Table 7 above illustrates that the 'other drug' category is not distributed as might have been expected between good and poor outcomes. 'Other drug' users appeared less likely to have a good treatment outcome (χ^2 [2] = 8.1, p = .018). A post hoc exploration of the data revealed that only one of the nine opioid/ate users had a good outcome.

Patients' referral source, age, mental health diagnosis, or time taken to enter treatment, were unrelated to outcome.

CISS scores at treatment entry and subsequent outcome

The average CISS score for patients with a good outcome was 9.2 (*n* = 80, *sd* = 2.7), it was not significantly different from the poor outcome patients' average CISS score of 9.6 (*n* = 69, *sd* = 2.8).

Figure 3, Baseline CISS item scores by outcome

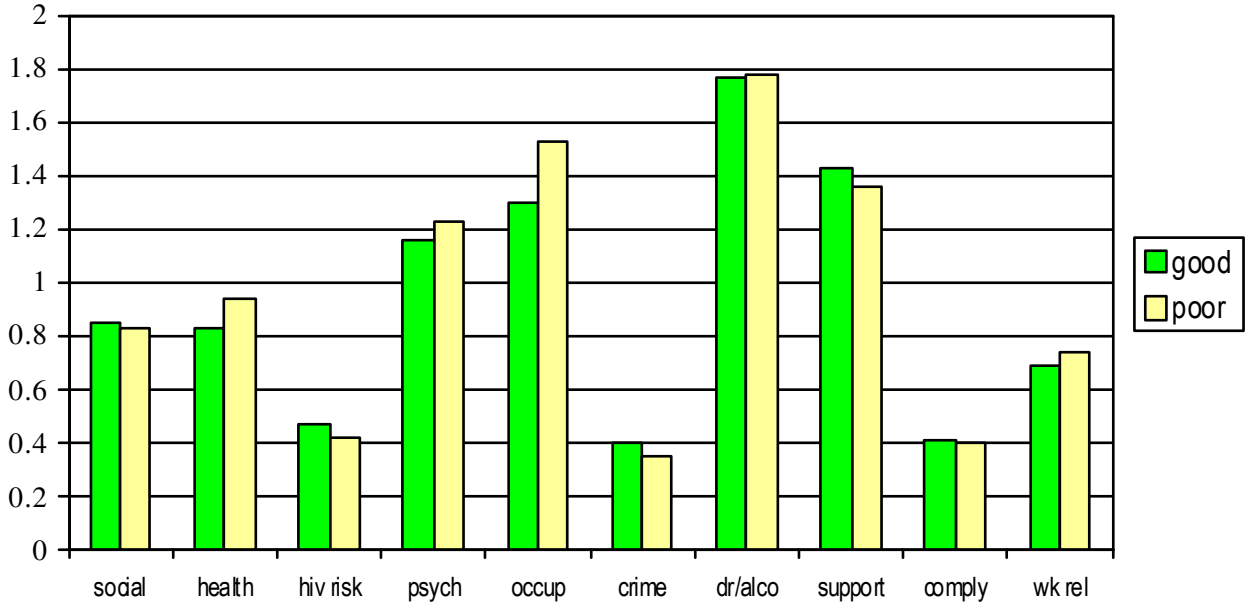


Figure 3 compares the average CISS item scores (0 to 2 scale) as assessed at intake between the 80 good and the 69 poor outcome patients. The taller the bars in the figure, the greater the average degree of problem within the relevant CISS domain. The only significant difference was that 'good outcome' patients tended to have fewer occupational problems (U = 2238, p = .027).

Table 8, Discharge status and outcome

	Completed treatment	Left Against Medical Advice	Discharged for rule violation	Agreed early discharge	total
% good	64.3	36.1	20.0	40.0	53.7
% poor	35.7	63.9	80.0	60.0	46.3
Total number	98	36	10	5	156

The expected split in table 8 above should be 54% good : 46% poor for all discharge types. Notable departures from this indicate that 64% of patients completing treatment do well, whereas fewer patients taking premature discharges (for whatever reason) have a good outcome. This finding is statistically significant (χ^2 [3] = 13.8, p = .003). Future patients thinking of quitting treatment early should be made aware of this statistic.

Summary, predictors of unplanned discharge and poor outcome

Premature discharge from treatment was associated with shorter treatment durations and poorer outcomes. But there were few predictors of premature discharge, only a tendency for personality disordered patients and those of unknown referral source to leave prematurely. However these factors did not predict eventual treatment outcome.

Eventual good outcome was predicted by

- Being male
- Completion of treatment
- Longer treatment duration
- Not being a primary opiate/oid user
- Fewer occupational problems

However, it should be remembered that these are only statistical trends and many clients without the above qualities will have good outcomes in any case. For example, 36% of patients taking a premature discharge against medical advice went on to have a good outcome anyway.

Findings regarding 109 patients followed-up

Attempts were made between 12.01.10 and 06.01.11 to contact all 149 patients. The target was to contact them one year after treatment discharge. Those who could be contacted were interviewed using the CISS outcome measure. Follow-ups were successfully completed on 109 of the 149 patients (73.2%). Thirty nine patients could not be contacted and one patient had died.

Figure 4, follow-up periods

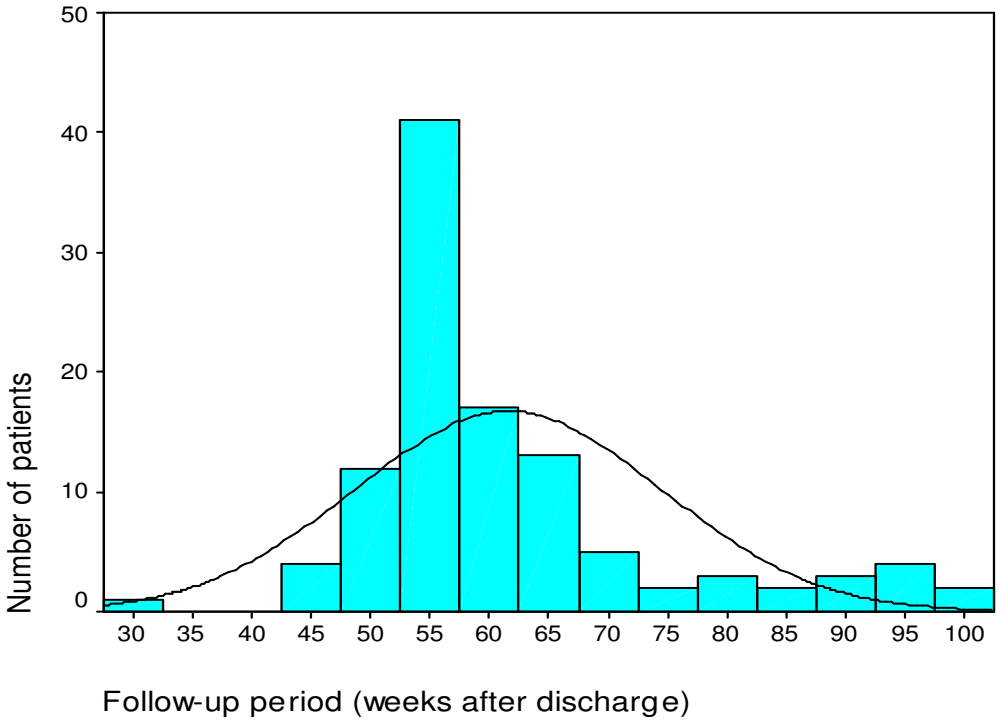


Figure 4 indicates the number of patients falling within each follow-up period. The majority of patients were followed-up after 50 weeks and the distribution is skewed to the longer follow-up periods on the right.

Standard follow-up times were hard to implement due to the long sampling period required to capture all the Dutch patients' treatment entry dates.

- Treatment entry took place between 06.08.08 to 09.11.09
- Follow-up interviews took place between 12.01.10 and 06.01.11

The average follow-up period was…

- From treatment entry: 78.5 weeks (*n* = 109, *sd* = 13.4, *range* = 52.3 – 116.0)
- From treatment discharge: 61.6 weeks (*n* = 109, *sd* = 13.0, *range* = 29.9 – 100.0)

Changes in patient dysfunction at follow-up

Figure 5, reductions of patient dysfunction

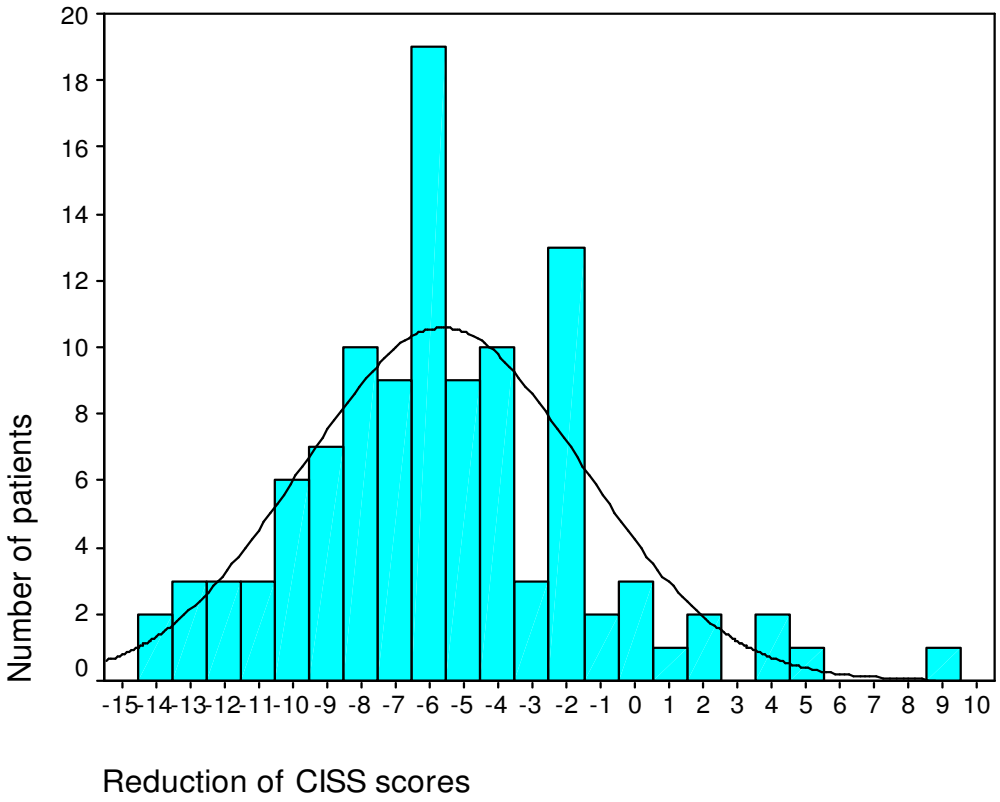


Figure 5 illustrates the reductions in CISS total scores achieved by the 109 patients who were followed-up. The inter-rater reliability of the CISS (Christo et al., 2000) would indicate that a score fluctuation of plus or minus one point is attributable to variations of CISS interpretation between raters. As such, only changes of 2 or more points are recognised as 'genuine' and on that basis:

- 89% of patients improved
- 6% of patients remained the same
- 6% of patients got worse

Seventeen patients achieved reductions of 10 CISS points or more. Changes of this magnitude are not uncommon among those who achieve total abstinence but would likely be perceived by the patients and their significant others as nothing short of miraculous.

Figure 6, the process of change

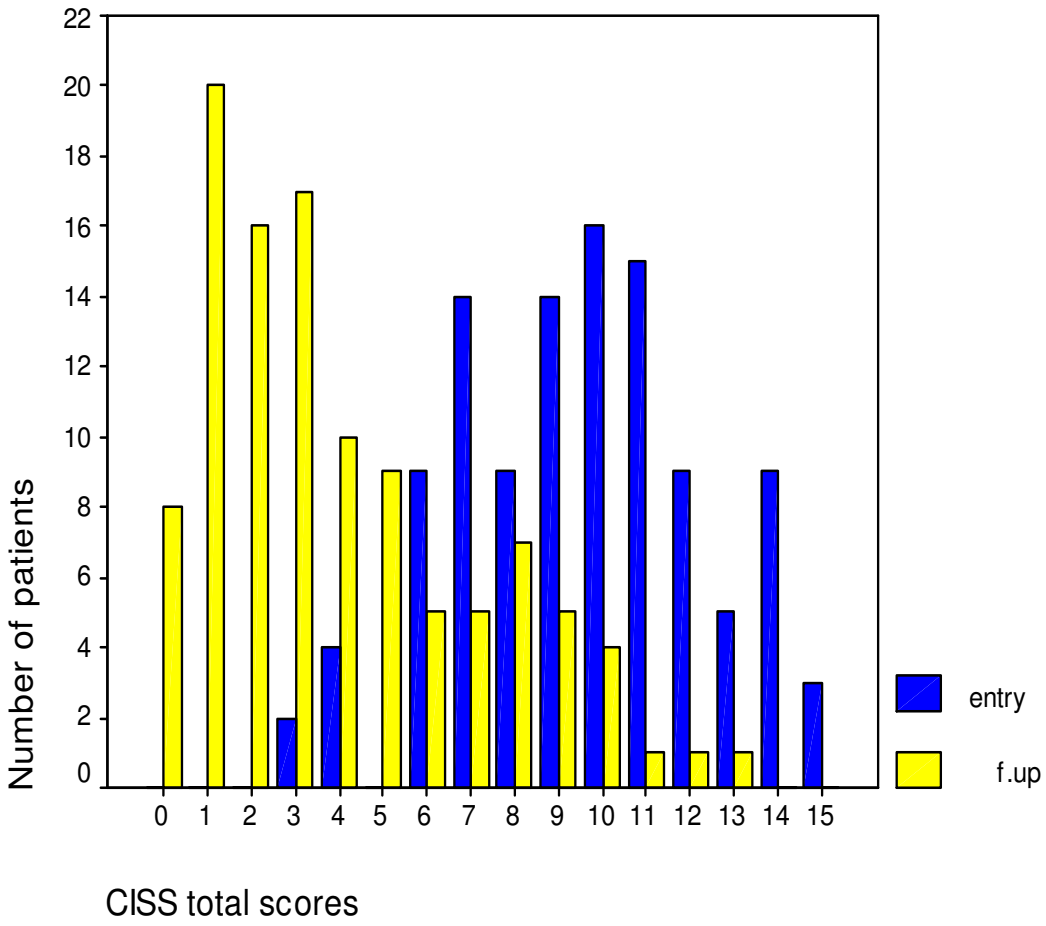


Figure 6 displays how CISS total scores are distributed among the 109 patients. Dark bars indicate the score distributions at intake and the light bars indicate score distributions at follow-up.

The average intake CISS total score of the 109 patients was 9.6 (*sd* = 2.8, *range* 3 - 15)
The average follow-up CISS total score of the 109 patients was 3.9 (*sd* = 3.1, *range* 0 - 13)
A paired sample t-test indicates this reduction to be highly significant (t [108] = 14.3, $p < .001$)

Figure 7, Changes in individual CISS item scores

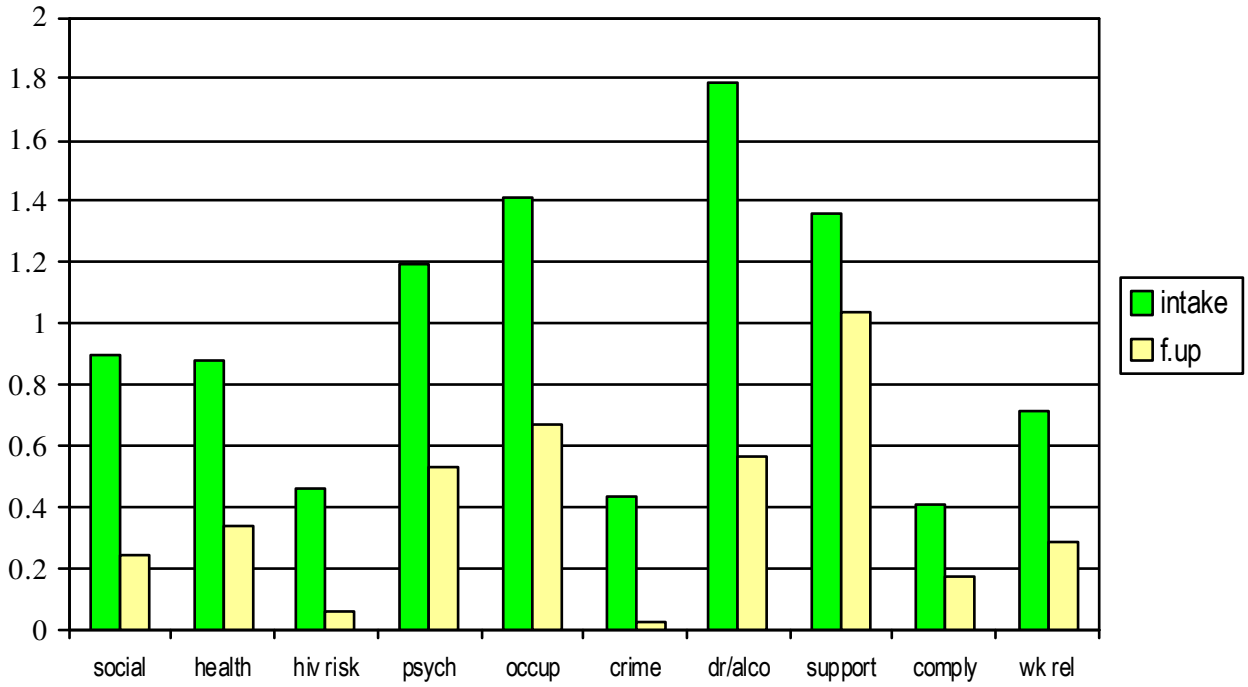


Figure 7 compares the average CISS item scores (0 to 2 scale) as assessed at intake and then again at follow-up. The taller the bars in the figure, the greater the average degree of problem within the relevant CISS domain. As can also be seen in figure 2, the greatest problems at intake were with drug or alcohol use, lack of support, lack of occupation, and psychological problems.

Ten Wilcoxon Signed Ranks statistical tests indicated that the reductions in all of the 10 CISS outcome domains were highly significant. Thus indicating that reductions in drug / alcohol use were generally accompanied by improvements in all other aspects of the patients' lives.

Detailed outcomes and what they mean for the patients

The CISS form is a rough indicator of professional impression of recent drug / alcohol related problems in the past month. Specific situations / behaviours are listed only as guiding examples and may not reflect the exact situations / behaviours of the patient. The CISS wording has been left intact in the following tables to give an idea of the actual type of dysfunction an item score of 0, 1, or 2 might indicate within each domain. The tables below illustrate the percentage of 109 patients rated as having none, moderate or severe problems within each CISS domain at intake and then again at follow-up.

Social functioning	e.g.	Intake	Follow-up
No problem	client has a stable place to live and supportive friends or relatives who are drug / alcohol free	28.4%	81.7%
Moderate problem	client's living situation may not be stable, or they may associate with drug users / heavy drinkers	53.2%	11.9%
Severe problem	living situation not stable, and they either claim to have no friends or their friends are drug users / heavy drinkers	18.3%	6.4%

General health	e.g.	Intake	Follow-up
No problem	client has reported no significant health problems	22.9%	69.7%
Moderate problem	teeth/sleep problems, occasional stomach pain, collapsed vein, asymptomatic hep B / C / HIV	66.1%	26.6%
Severe problem	extreme weight loss, jaundice, abscesses / infections, coughing up blood, fever, overdoses, blackouts, seizures, significant memory loss, neurological damage, HIV symptoms	11.0%	3.7%

Sexual or injecting risk behaviour	e.g.	Intake	Follow-up
No problem	client claims not to inject, or have unsafe sex (except in monogamous relationship with longstanding partner, spouse)	58.7%	94.5%
Moderate problem	may admit to occasional "unsafe" sexual encounters, or suspected to be injecting but denies sharing injecting equipment	36.7%	4.6%
Severe problem	client may admit to regular "unsafe" sexual encounters, or has recently been injecting and sharing injecting equipment	4.6%	0.9%

Psychological	e.g.	Intake	Follow-up
No problem	client appears well adjusted and relatively satisfied with the way their life is going	2.8%	49.5%
Moderate problem	client may have low self-esteem, general anxiety, poor sleep, may be unhappy or dissatisfied with their lot	75.2%	47.7%
Severe problem	client has a neurotic disorder e.g., panic attacks, phobias, OCD, bulimia, recently attempted or seriously considered suicide, self-harm, overdose or may be clinically depressed. Or client may have psychotic disorders, paranoia (e.g., everybody is plotting against them), deluded beliefs or hallucinations (e.g. hearing voices)	22.0%	2.8%

Occupation	e.g.	Intake	Follow-up
No problem	client is in full time occupation e.g., homemaker, parent, employed, or student	11.9%	51.4%
Moderate problem	client has some part time parenting, occupation or voluntary work	34.9%	30.3%
Severe problem	client is largely unoccupied with any socially acceptable pastime	53.2%	18.3%

Criminal involvement	e.g.	Intake	Follow-up
No problem	no criminal involvement (apart from possible possession of illicit drugs for personal use)	59.6%	97.2%
Moderate problem	client suspected of irregular criminal involvement, perhaps petty fraud, petty theft, drunk driving, small scale dealing	37.6%	2.8%
Severe problem	suspected of regular criminal involvement, or breaking and entering, car theft, robbery, violence, assault	2.8%	0.0%

Drug / alcohol use	e.g.	Intake	Follow-up
No problem	no recent drug / alcohol use	4.6%	59.6%
Moderate problem	client suspected of periodic drug / alcohol use, or else may be socially using drugs that are not considered a problem, or may be on prescribed drugs but not supplementing from other sources	11.9%	23.9%
Severe problem	client suspected of bingeing or regular drug / alcohol use	83.5%	16.5%

Ongoing support	e.g.	Intake	Follow-up
No problem	regular attendance of AA / NA, drug free drop in centre, day centre, counselling, or treatment aftercare	16.5%	37.6%
Moderate problem	patchy attendance i.e., less than once a week contact with at least one of the above	31.2%	21.1%
Severe problem	client not known to be using any type of structured support	52.3%	41.3%

Compliance	e.g.	Intake	Follow-up
No problem	attends all appointments and meetings on time, follows suggestions, or complies with treatment requirements	60.6%	83.5%
Moderate problem	not very reliable, or may have been reported as having an "attitude" problem or other difficulty with staff	37.6%	15.6%
Severe problem	chaotic, may have left treatment against staff advice or been ejected for non-compliance e.g. drug use, attitude problem	1.8%	0.9%

Working Relationship	e.g.	Intake	Follow-up
No problem	relatively easy going e.g., interviews easily, not time consuming or stressful to work with	37.6%	72.5%
Moderate problem	moderately challenging e.g., a bit demanding or time consuming, but not excessively so	53.2%	26.6%
Severe problem	quite challenging e.g., very demanding, hard work, time consuming, emotionally draining or stressful to see	9.2%	0.9%

Conclusions

- **The following success rates are conservatively based by including all 149 patients on the assumption that the 40 patients not followed-up (response rate = 73.2%) showed no improvement or otherwise had poor outcomes.**
    - **Being totally abstinent from all drugs or alcohol at follow-up**
      43.6% (*n* = 65)
    - **Achieving low problem severity at follow-up (CISS < 6, see appendix)**
      53.7% (*n* = 80)
    - **Showing any reduction in measured levels of dysfunction**
      66.4% (*n* = 99)

However the success rates might be higher because some of the missing patients would not have been contactable due to having recovered and being in full time occupation.

- **The following success rates are thus more liberally based by including the 1 patient that died but not including the other 39 patients that could not be contacted for follow-up (*n* = 110).**
    - **Being totally abstinent from all drugs or alcohol at follow-up**
      59.1%
    - **Achieving low problem severity at follow-up (CISS < 6, see appendix)**
      72.7%
    - **Showing any reduction in measured levels of dysfunction**
      90.0%

Discussion

Castle Craig Hospital provides a service to people with a range of addiction severity. Those in this group are drug or alcohol dependent people who often have the additional complications of varying degrees of co-morbidity, lack of support, poor health, and psychological problems. However, good outcomes are achieved, despite overall high levels of associated problems at intake. The patients appear similar in dysfunction to those attending outpatient drug or alcohol services. Although the goal of Castle Craig's treatment is abstinence, it should be noted that many who fail to achieve that goal still report reduced levels of problem severity at follow-up. Thus, even the treatment 'failures' appeared to have benefited from their experience in treatment, possibly by gaining a period of respite during which to recover from the consequences of their excessive drinking or drug use.

Castle Craig Hospital continues to demonstrate their ability to produce high quality research within the limitations of a busy service setting. The notion of evidence led practice is frequently discussed, but it could be argued that experienced practitioners already make best use of their resources. Thus, the purpose of such research could only be to illustrate that the experts know what they are doing (e.g., practice led evidence). This view may well be partially justified, as many of the findings in this study are obvious to those who are familiar with the field. However, some findings here are obvious only with the benefit of hindsight and others may yet inform better practice and commissioning.

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Appendix, CISS comparison scores

Comparisons for interpreting CISS total score (sum of item scores)

Abstinence based treatment outcomes: Six-month outcomes for 90 treated drug users from abstinence based treatment centres

In the month before follow-up:	Good outcome: 48 were abstinent	and average CISS score was 2.9 (sd = 1.9)
	Poor outcome: 42 had used drugs	and average CISS score was 10.6 (sd = 4.3)
Over entire six month period:	Good outcome: 33 remained abstinent*	and average CISS score was 2.9 (sd = 2.0)
	Good outcome: 22 had a lapse*	and average CISS score was 4.5 (sd = 2.9)
	Poor outcome: 35 had a relapse*	and average CISS score was 11.2 (sd = 4.5)

* Lapse status was assessed using an eight-level scaling of lapse / relapse outcomes (as defined by Walton et al., 1994). Drug use over the entire six-month follow-up period was assessed using the principle of Timeline Follow Back (Sobell et al., 1988), as adapted for drug use by Walton et al. (1994).

N.B. a CISS cut-off score of 6 or less can be used to indicate "good outcome" for abstinence based treatment. This correctly identified 88% of outcomes where drug use was assessed only in month before follow-up, and 84% of outcomes where drug use was assessed over the entire six-month follow-up period.

Harm minimisation prescribing based service score distribution:

Average CISS score among 243 clients at a London community drug service = 9.1 (sd = 3.4)

16%	obtained CISS scores in range 0 to 5 =	low problem severity
67%	obtained CISS scores in range 6 to 12 =	average problem severity
17%	obtained CISS scores in range 13 to 20 =	high problem severity

Outpatient alcohol service score distribution:

Average CISS score among 102 clients at a London community alcohol service = 8.1 (sd = 3.4)

15%	obtained CISS scores in range 0 to 4 =	low problem severity
70%	obtained CISS scores in range 5 to 11 =	average problem severity
15%	obtained CISS scores in range 12 to 20 =	high problem severity

Alcohol users generally score one CISS point less than drug users. Alcohol users are less likely to score on problems of social functioning, HIV risk behaviour and criminal involvement, but they are more likely to score on psychological problems.

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