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WHOS RTOD –Residential Treatment for Opioid Dependence Stabilisation Program

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WHOS RTOD – RESIDENTIAL TREATMENT FOR OPIOID DEPENDENCE STABALISATION PROGRAM

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

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EXECUTIVE SUMMARY

Background

In February 2009 WHOS opened, and continues to develop its residential stabilisation program (WHOS RTOD) for individuals on opioid pharmacotherapy treatment, the first of its kind in Australia. This 10 bed, mixed-gender opioid stabilisation service (WHOS RTOD – Residential Treatment for Opioid Dependence) was funded by the Commonwealth Department of Health and Ageing and provides services for opioid maintained clients that may have mental health, physical health, justice and associated complex need issues.

The WHOS RTOD stabilisation service, a modified therapeutic community, specifically aims to provide a quality service that enables opioid maintained clients the opportunity to stabilise within a supportive environment and to foster health gains within an individualised and streamlined community-based treatment program. This service is complemented by incorporating the concepts of harm minimisation from substance misuse including the provision of education to minimise the spread of communicable diseases including HIV/AIDS.

Methodology

A raw electronic data file containing all admissions to the WHOS RTOD program was collected at WHOS RTOD from the 1st March 2009 to the end of August 2010 (the service's first 18 months), and was stored on the Network of Alcohol and other Drug Agencies (NADA) data system, the peak NGO body for NSW. Additional data collected by WHOS RTOD staff at client admission was added to the research database. Within this period a total of 75 unique clients began a total of 90 treatment episodes. Data collected consisted of data from the NSW Minimum Data Set (NMDS) questionnaire, the Brief Treatment Outcome Measure (BTOM) and research data collected by WHOS RTOD staff. These data collection tools covered areas of demographics, drug use history, treatment seeking, mental health, criminal history, treatment cessation and pharmacotherapy dose and mental health medication.

Results

There were four main findings from the present study. Firstly, the poor social functioning of clients presenting for treatment at WHOS RTOD. Secondly, the relatively high rates of treatment completion from WHOS RTOD. Thirdly, the successful stabilisation of clients on pharmacotherapy and mental health medication. Finally, the apparent lack of differences between male and female clientele.

Profile of clients presenting for treatment

Clients were in their early thirties and there was a high proportion of females identifying as Aboriginal and/or Torres Strait Islander. No clients reported that they were currently employed. There was a high amount of DOCS involvement in the 12 months preceding treatment admission amongst those that had children. There were also high levels of criminal history, with just under three-fifths reporting recent criminal involvement and recent arrests.

The majority of clients self-reported that their physical health was poor and there were high rates of both hospital admissions and overdose. Mental health diagnoses were high, and there were high rates of mental health medication amongst treatment admissions. Over one-third reported a previous suicide attempt. Poly-drug use in the month prior to admission was evident. There were low levels of self-referral.

Treatment completion and retention

Treatment completion rates were relatively high, and many clients remained in treatment over 90 days. Over two-thirds of re-admissions went on to complete treatment. There were no predictors of treatment retention or completion.

Clients reported not only receiving medical, dental and mental health support, but there were also high levels of education and support around health promotion, harm minimisation, relapse prevention, living skills, education, housing assistance and counselling.

There were high rates of service satisfaction from clients' with over 70% reporting that they were satisfied with the treatment they received at WHOS RTOD. A majority of these clients also reported that their health had improved since treatment admission.

Stabilisation of clients

Over 50% of clients had their pharmacotherapy dose reviewed and changed from the visiting medical officer (VMO), and over one-third had their mental health medication reviewed and modified. Over one-quarter were placed on a new mental health medication whilst in treatment.

Gender differences

There were very few differences between men and women in terms of demographics, drug use, current mental health and treatment retention.

Future directions

WHOS RTOD was successful in appealing to clients who have complex needs and are therefore often considered too hard to rehabilitate. The success of the first 18 months suggests that such a service is necessary and would be greatly utilised by clients and members from the drug and alcohol field. The expansion of RTOD into rural areas and other states would be beneficial, considering it is the only one of its kind and limited to 10 beds at the present time.

Furthermore, it is necessary that these clients be followed-up in order to completely understand the effect that WHOS RTOD may have on outcomes such as drug use, mental health, physical health, family, housing, and social functioning once treatment is completed.

Conclusions

The types of clients presenting for treatment at WHOS RTOD were of complex needs and were functioning poorly socially, physically and mentally at the time of admission. Despite this, there was a high rate of retention and treatment completion. Furthermore, one of the main objectives

of WHOS RTOD is to stabilise clients. This was achieved, as evidenced by the evaluation and review of pharmacotherapy doses and mental health medication, and changes to these when necessary. The vast majority of clients were satisfied with the treatment they received and furthermore, reported that their health had improved since treatment admission.

WHOS RTOD is the first residential service of its kind in Australia that has attempted to address an issue that has previously been neglected: the treatment of complex needs clients in opioid treatment programs. The first 18 months of the service has been successful in attracting its target group to treatment, stabilising them and providing them with not only medical and mental health services, but providing support and education, housing advocacy and coordinated 'through-care' back into the community

1.0 INTRODUCTION

1.1 Opioid dependence and treatment

Substance dependence is described as a complex, chronic and relapsing disorder determined by biological, genetic, psychological, social, cultural and environmental factors. Although population levels of heroin dependence are relatively low (0.3% in preceding 12 months) (Australian Institute of Health and Ageing 2008), the harms associated with such use are well documented. There are a number of risks and harms associated with heroin use including mortality (Hulse, English et al. 1999), fatal and non-fatal overdose (Warner-Smith, Darke et al. 2001; Warner-Smith, Darke et al. 2002; Darke, Ross et al. 2007), high rates of blood-borne viruses (Des Jarlais and Friedman 1996; Ray 2002), high rates of psychiatric morbidity (Darke, Ross et al. 2005; Darke, Ross et al. 2005; Mills, Lynskey et al. 2005; Ross, Teesson et al. 2005; Darke, Mills et al. 2009), and high levels of criminal involvement (Ross, Teesson et al. 2005).

One of the most common treatment modalities for opioid dependence is opioid replacement pharmacotherapy. This involves the administration of a long-acting opioid drug, for the purpose of preventing or substantially reducing the injecting of illicit opioids (Janssen and Connie 2006). The goal of such treatment is to improve the social, psychological and physical health of the dependent person. Whilst the philosophy from the originators of this form of opioid replacement therapy was to treat a chronic and metabolic disease with the view of indefinite maintenance on methadone, known as methadone maintenance, or long-term opioid replacement therapy, others have argued that abstinence from all drugs including methadone is an attainable goal, and this can be achieved in a relatively short time (Ward, Mattick et al. 1998). This has led to the second model of short-term methadone treatment. Both aim for individuals to cease heroin use without experiencing withdrawal effects to stabilise their life and ideally stay free of heroin (Janssen and Connie 2006).

As mentioned, many dependent users can suffer from chaotic lives and it has recently been noticed that even those that are in a pharmacotherapy treatment may still be suffering socially, physically and mentally, and in need of support and education in order to get their lives on track, whether they are on a pharmacotherapy in the short-term or the long-term.

1.2 Therapeutic Communities

Therapeutic Communities (TC) were developed in the mid 1960s in response to a rise in drug and alcohol abuse and the belief that no single approach could encompass all types of drug and alcohol users (De Leon 1985). The basis of a TC is the view that individual change must occur through self-help in a community-living environment with the aim of offering a complete change in lifestyle which includes abstinence, stabilisation, elimination of anti-social behaviour, development of employable skills, and the acquisition of positive attitudes, values and behaviours (De Leon 1985). Peer influence is used to help individuals learn to assimilate social norms and develop more effective social skills (Smith, Gates et al. 2006). The use of the 'community', through which this change will occur, is what differentiates TCs from other treatment services, such as residential rehabilitation.

1.3 We Help Ourselves (WHOS)

WHOS (We Help Ourselves), a registered charity, was established in 1972 by a group of committed ex-consumers of alcohol and other drugs, who had identified an innovative and cost effective way to help substance dependant members within the general community in finding a productive way of living. This humble beginning of a self-help initiative has evolved into a recognised professional organisation today known as 'WHOS'. The organisation has demonstrated the ability to survive the early days of its evolution, the ever-changing trends in the field and to stay abreast of current cutting-edge initiatives.

The primary goal of WHOS is to foster personal growth. Instruments to achieve this are the structured TC environment with defined rules, moral and ethical boundaries and also a community of concerned people who are working together to help themselves and each other. Peer dynamics are utilised to gain personal insights and convert this into positive change.

The WHOS program also operates a harm minimisation strategy with the aim to provide knowledge on safer practises and available networks in order to decrease risky practices. As a result, the program contains educational groups and individual sessions on drug overdose, sexually transmitted diseases, HIV/infectious disease and health promotion.

Other services provided include medical and dental checks, advocacy for legal issues, psychiatric liaison, and financial and employment skill development. Staff members provide services that advocate for the clients in areas of criminal justice/legal system, family and community services, housing and financial matters.

WHOS is made up of a number of different services. These include WHOS New Beginnings (a women's residential therapeutic community), WHOS Gunyah (a men's residential therapeutic community), WHOS MTAR (a Methadone to Abstinence Residential mixed-gender therapeutic community), WHOS Hunter (a rural based mixed-gender residential therapeutic community), WHOS RTOD (Residential Treatment of Opioid Dependence – a modified, mixed-gender, therapeutic community with a treatment goal of stabilisation), and WHOS Sunshine Coast (Queensland), a regional residential mixed-gender therapeutic community.

1.4 WHOS RTOD

The Department of Health and Ageing has funded the establishment of a 10 bed mixed-gender opioid stabilisation service (WHOS RTOD) providing services for opioid maintained clients that may have mental health, physical health, justice, and other problems of high need, acknowledging the limited options of residential treatment for individuals on opioid pharmacotherapy treatment.

In February 2009 WHOS opened and continues to develop the residential stabilisation program (RTOD) for individuals on opioid pharmacotherapy treatment. The WHOS RTOD stabilisation service specifically aims to provide a quality service that enables opioid maintained clients the opportunity to stabilise within a supportive environment and to foster health gains within an individualised and streamlined community-based treatment program. This service is complemented by incorporating the concepts of harm minimisation from substance misuse including the provision of education to minimise the spread of communicable diseases including HIV/AIDS. This model is currently the only one of its kind in Australia.

The WHOS RTOD service targets those clients with high complex needs requiring a period of stabilisation whilst remaining on opioid treatment. Defining complex needs in relation to suitability for the program encompasses co-morbidities both in mental health and/or physical health, poly-drug use, and/or chaotic lifestyles preventing stability whilst in the community.

In the development of the WHOS RTOD stabilisation program, consideration was given to the appropriateness of the therapeutic community model for this service. A review of TC literature – e.g. Dr George Deleon, "Community as Method" (1996): "The Therapeutic Community: Theory, Model and Method" (2000) and "Towards Better Practice in TCs: Essential Elements of the TC Model" – (NIDS funded research, Linda Gowing, Richard Cooke, Andrew Biven, and David Watts, 2002) determined that the service fits within the modified TC model .

Traditional TC stages/phases in relation to a client's length of stay at WHOS RTOD do not fit neatly into the usual TC model due to the client's mental health and complex needs requirements. While the WHOS TC community operates as one community supporting each other, utilising the client-community for decision making and peer support has required some modification to meet the needs of the clients, in particular for their mental health and medical issues. Therefore length of stay has been designated to tiers of 30, 60 and 90 day stays.

Developing WHOS RTOD's program strong links with opioid treatment services and prescribers in the community has been essential to the continuity of care for the client entering and exiting the program. Locum prescribing arrangements have been developed to facilitate scripting of opioid treatment whilst in residence at WHOS RTOD. Clients return to their community prescriber/clinic/pharmacy upon discharge.

Clients applying to the WHOS RTOD stabilisation program must be on opioid substitution treatment to access this service. Methadone, buprenorphine and buprenorphine/naloxone are the accepted opioid treatment pharmacotherapies with no restriction placed on dosage to enable entry to the program. Assessment is conducted initially by a phone assessment to determine suitability with a face-to-face assessment arranged prior to admission. Clients with current benzodiazepine and/or alcohol use may require selective detoxification prior to entry into the WHOS RTOD residential program.

Most admissions to WHOS RTOD are direct from the community, as clients need to be linked in with a community prescriber prior to entry. WHOS RTOD has taken clients from across NSW, ACT and Victoria since opening its doors, and there continues to be interest in the program from other states and territories due to the unique nature of this service.

1.5 Study aims

The main aims of the current study are:

1. Describe the characteristics of WHOS RTOD clients in terms of demographics, drug use history, treatment history, mental and physical health and social functioning.
2. Describe treatment episodes in terms of length of stay and treatment completion.
3. Examine pharmacotherapy dose and mental health medication at admission and treatment cessation.
4. Determine characteristics associated with treatment completion and retention.

2.0 METHODS

2.1 Procedure

All data used for this study were collected routinely by WHOS treatment staff on admission of clients into treatment and at cessation of treatment. Data collection took place with the help of two tools: the NSW Minimum Data Set (NMDS) questionnaire and the Brief Treatment Outcome Measure (BTOM) questionnaire. Treatment staff administered both questionnaires on the day of admission and recorded additional data at treatment cessation.

The NMDS and BTOM data were extracted from the Network of Alcohol and other Drug Agencies (NADA) – the NSW peak alcohol and other drug agency, which stores the data for member agencies for backup. Other data that are routinely collected by WHOS treatment staff were collected from the client's files and entered into an SPSS database by a researcher.

2.2 Sample

All clients and treatment episodes started between 1st March 2009 and 31st August 2010. The raw data provided 75 unique clients who started a total of 90 treatment episodes within the 18 month period.

Results are based on the first admission of clients, though there is mention of repeat admissions in the report.

2.3 Questionnaires

2.3.1 The Alcohol and Other Drugs Treatment Services Minimum Data Set

The Alcohol and Other Drugs Treatment Services Minimum Data Set (AODTS NMDS) is a nationally agreed set of common data items collected by government-funded providers for clients registered for alcohol and other drug treatment. The collection aims to provide ongoing information on the demographics of clients who use these services, the treatment they receive

and administrative information about the agencies that provide alcohol and other drug treatment. The data at WHOS collection began in July 2000.

The unit of measurement is the treatment episodes, and the data set consists of a range of items describing administrative, social, demographic, drug-related and treatment-related information.

2.3.2 The Brief Treatment Outcome Measure

The BTOM is a multidimensional instrument that has been designed to inform the clinical management of individual and alcohol and other drug clients as well as to provide information for evaluation and monitoring. It was designed by the National Drug and Alcohol Research Centre (NDARC), in cooperation with the NSW Health Department.

The BTOM comprises sections on demographics, drug use, drug use behaviour, health, social and psychological functioning, and treatment-specific information, commencement of treatment and cessation of treatment. It also incorporates most of the NSW MDS items.

The BTOM includes scales relating to measures of psychological distress and social functioning. These scales were developed or adapted from other instruments and were tested for reliability and validity. Results from a 12-month clinical trial and a psychometric evaluation study indicate that the BTOM has good reliability and acceptable validity.

In the current study the average score on the psychological and social functioning scales are reported. Eight dichotomous psychological health variables form the scale on psychological health which measures current level of psychological distress. The level of distress can range from a score of 0 (very low distress) to 8 (very high distress). The six social functioning questions examine frequency of conflict in the client's social life as well as financial problems. Scores range from 0 (good social functioning) to 18 (poor social functioning).

2.3.3 Research data and additional data

WHOS treatment staff also have been routinely collecting additional information on clients. These include items on crime, children and involvement of the Department of Community Services, physical health, initiation into drug use, and motivations for treatment entry, goals and motivation to change.

Treatment staff also collect information on pharmacotherapy dose at admission and cessation, as well as mental health medication. Clients are also asked about any mental health diagnosis they have, as well as any previous suicidal behaviour.

2.3.4 Missing data

There are some occurrences of missing data in individual files. Three clients were also still in treatment at the time that the data was collated so no treatment cessation data was obtained for these clients.

2.4 Statistical analyses

For normal distributed continuous, data means were reported and t-tests were conducted. Medians were reported for highly skewed data and Mann-Whitney U statistics obtained. Odds ratios, with 95% confidence intervals, were calculated to examine group differences involving categorical variables. Logistic regressions were conducted to determine factors independently associated with dichotomous variables. Independent predictors of continuous variables were determined using linear regression. All analyses were conducted using PASW (release 18.0)

3.0 RESULTS

3.1 Demographics

Demographics characteristics of clients admitted to WHOS RTOD are presented in Table 1. The mean age was 33.7 years (SD 8.7, range 18-51). There were no differences in the mean age between males and females. Just over half the sample was male and 13% (both genders) identified as Aboriginal and/or Torres Strait Islander. Women were significantly more likely to identify as Aboriginal and/or Torres Strait Islander then males (20% vs. 3%, OR 9.75, CI: 1.14-83.77). The vast majority were born in Australia.

Two-fifths of the sample reported not completing Year 10 and only a minority reported completing a trade/technical or tertiary/university degree. Nearly all the sample reported that they were either on a temporary benefit from the government or on the pension (i.e. disability). No clients reported working either full-time or part-time; however, just under one-quarter reported that they had worked in the preceding 12 months for an average of 5.8 months (SD 2.7, range 1-12), and just over one-in-ten reported that they had studied in the preceding 12 months, on an average of 3.2 months (SD 2.3, range 1-8).

Males were more likely to have worked in the preceding 12 months (33% vs. 11%, OR 2.7, CI: 0.78-0.92). There were no other differences between males and females with regards to demographics.

Table 1: Demographics of WHOS RTOD clients

Variable	WHOS RTOD (N=75)		
	Total (n=75)	Males (n=40)	Females (n=35)
Mean age in years	33.7	34.3	33.0
Male (%)	53	100	0
Aboriginal and/or Torres Strait Islander (%)	13	3	26
Born in Australia (%)	84	83	86
Education level achieved (%)			
Did not complete year 10	40	50	29
Completed year 10	32	30	34
Completed year 12	15	15	14
Completed trade/technical	5	0	11
Completed tertiary/university degree	7	3	11
Main source of income (%)			
Full-time work	0	0	0
Part-time work	0	0	0
Temporary benefit	61	70	52
Pension	36	28	46
Dependant on others	1	0	0
Crime	0	0	0
No income	0	0	0
Other	3	3	3
Worked in past 12 months (%)	23	33	11
Mean no. months employed past 12 months*	5.8	6.4	4
Student in past 12 months (%)	12	13	11
Mean no. months studying in past 12 months*	3.2	4.4	1.75

* Of those that had worked/studied

3.2 Marital status, accommodation and living arrangements

Over two-thirds of the sample reported that they were single, with one-fifth reporting that they were in a de-facto relationship. There were no differences between males and females. The most common form of accommodation was a rented/house or flat, with just over one-in-ten reporting

that they lived in a privately owned house/flat. Twelve percent reported that they were homeless or had no usual place of residence (see Table 2).

Just over two-fifths reported that they lived alone, and just over one-in-six reported that they lived with children or they were living at their parent's house.

Approximately half the sample reported that they had children under the age of 18 years, though females were significantly more likely than males to have children under 18 years of age (71% vs. 31%, OR 5.63, CI: 2.07-15.29). Of those that had children, over two-thirds had been involved with DOCS in the preceding 12 months and, of those, just under four-fifths had received support or intervention by DOCS. Three-fifths had a child removed by DOCS in the preceding 12-months and 9 percent reported that they had a child restored to them in the preceding 12 months. Females were more likely to have had involvement from DOCS in the preceding 12 months (68% vs. 33%, OR 4.25, CI: 98-18.40) even taking into consideration their higher likelihood of having children.

Table 2: Marital status, accommodation and living arrangements of WHOS RTOD clients

Variable	WHOS RTOD (N=75)		
	Total (n=75)	Males (n=40)	Females (n=35)
Marital status (%)			
Single	67	73	60
De-facto	19	13	26
Married	4	5	3
Separated	5	3	8
Divorced	4	5	3
Widowed	1	3	0
Usual form of accommodation (%)			
Rented house/flat	60	70	49
Privately owned house/flat	13	15	11
Boarding house	1	0	3
Hostel	3	5	0
Drug treatment residence	3	0	6
Shelter/refuge	4	3	0
Prison	1	0	3
No fixed address/homeless	12	8	17
Other	1	0	3
Living with (%)			
Alone	43	35	51
Partner/spouse	9	10	9
With child(ren, inc with partner/friends/family)	16	15	17
Parent(s)	16	25	6
Friends/acquaintances	5	8	9
Other relatives	3	5	0
Have children (under 18 years of age) (%)	49	30	71
Any involvement with DOCS past 12 months*	57	33	68
If yes, receive support/intervention**	77	80	76
Child removed past 12 months**	59	60	59
Child restored past 12 months**	9	20	6

* Of those with children under 18 years (n=37)
** Of those that had DOCS involvement in the preceding 12 months (n=22)

3.3 Criminal history

The vast majority of clients reported that they had been involved in criminal activity and charged with a criminal offence, in their lifetime (Table 3). Just over two-thirds believed that their drug use predated their criminal behaviour. Two-thirds reported that they had been arrested in the preceding 12 months on a median of 2 times (SD 1.6, range 1-9) and had committed a median of 3.5 illegal acts (SD 64.7, range 1-365) which excluded drug use. Women were significantly more likely to have been arrested in the preceding 12 months (3 times vs. 2 times, Mann-Whitney $U=332$, $p < 0.05$). There were no other differences between males and females and criminal history.

Table 3: Criminal history of WHOS RTOD clients

Variable	WHOS RTOD (N=75)		
	Total (n=75)	Males (n=40)	Females (n=35)
Ever been involved in criminal activity (%)	84	83	86
Ever been charged (%)	87	89	86
Drug use predate crime (%)	68	60	77
Arrested in past 12 months (%)	59	65	51
Median no. arrests in past 12 months*	2	2	3
Committed illegal acts in past 12 months (%)#	59	65	51
Median no. illegal acts in past 12 months*	3.5	3.5	4

* Of those arrested/committed illegal act
# Not including drug use

3.4 Physical and mental health

3.4.1 Physical health

The majority of clients believed that their health in the preceding 12 months was fair to poor (Table 3). Only 1% reported that they thought their health had been excellent in the preceding 12 months. Females were significantly more likely than males to report poor health (46% vs. 20%, OR 3.37, CI: 1.21-9.35).

Just over half the sample reported that they spent time in hospital in the preceding 12 months (excluding stays for detoxification and rehabilitation), on a median number of seven days (SD 44.0, range 1-240).

Just under one-third reported that they had overdosed in the preceding 12 months on a median of one time (SD 6.8, range 1-30).

Table 4: Health, hospital stays and overdoses in the past 12 months

Variable	WHOS RTOD (N=75)		
	Total (n=75)	Males (n=40)	Females (n=35)
Health during past 12 months (%)			
Excellent	1	3	0
Very Good	7	5	9
Good	24	20	29
Fair	35	50	17
Poor	32	20	46
Spent time in hospital past 12 months (%)	53	45	63
Median no. days spent in hospital (excluding detoxification or rehabilitation)	7	5.5	16
Overdosed in past 12 months (%)	32	25	40
Median no. overdose past 12 months	1	1	1.5

3.4.2 Mental health

Just fewer than three-quarters had ever been diagnosed with a mental health problem (Table 5). The most common diagnoses were for depression and anxiety, followed by schizophrenia, post traumatic stress disorder (PTSD) and bipolar. Less than two-thirds were currently on any mental health medication at admission, a median of one medication (SD 0.6, range 1-3).

Approximately 50% had ever felt suicidal and just under two-fifths reported that they had previously attempted suicide, a median of 65 months ago, or about 5 years ago (SD 61.5, range 1-240).

There were no differences between males and females with regards to mental health and suicide history.

Table 5: Mental health and suicide history of WHOS RTOD clients

Variable	WHOS RTOD (N=75)		
	Total (n=75)	Males (n=40)	Females (n=35)
Ever diagnosed with a mental health problem (%)	71	68	74
Diagnosed with (%)*			
Depression	49	37	62
Anxiety	34	33	35
Social phobia	2	4	0
Bipolar	13	11	15
Schizophrenia	17	22	12
PTSD	15	19	12
Panic	4	4	4
Drug induced psychosis	6	11	0
ADD	4	4	4
Borderline	6	4	8
Currently taking mental health medication (%)	63	60	65
Mean no. of medications currently on	1	1	1
Suicide (%)			
Ever felt suicidal	51	50	51
Ever attempted suicide	37	40	34
Median no. months past suicide attempt	65	52.5	80

* Of those diagnosed with mental health problem

Psychological distress scale

The psychological distress scale in the BTOM was used to measure levels of psychological distress amongst clients on admission (Table 6). Scores range from 0 (very low distress) to 8 (very high distress). The mean score of WHOS RTOD clients was 4.6 (SD 1.8, range 0-7), which is comparable to that of other clients assessed as part of the BTOM clinical trial and also of clients from WHOS MTAR (a Methadone to Abstinence Rehabilitation at WHOS). There were no differences in mean score between males and females.

Table 6: Comparison of scores on the psychological distress scale

	N	Mean score
RTOD client group	75	4.6
MTAR client group	65	3.8
Rehabilitation clients – BTOM clinical trial	30	5.3
Opioid maintenance pharmacotherapy clients – BTOM clinical trial	280	4.0
Detoxification clients – BTOM clinical trial	111	5.0
Counselling clients – BTOM clinical trial	56	4.6

3.5 Social functioning

Equal proportions reported that they were 'somewhat satisfied' or 'mostly satisfied' with their current personal relationships, though just over one-quarter reported that they were 'not satisfied' with their personal relationships (Table 7).

Table 7: Personal relationship satisfaction amongst WHOS RTOD clients

Variable	WHOS RTOD (N=75)		
	Total (n=74)	Males (n=39)	Females (n=35)
Satisfaction with personal relationships			
Not satisfied	27	18	37
A little satisfied	9	8	11
Somewhat satisfied	27	33	20
Mostly satisfied	28	30	26
Very satisfied	8	10	6

The social functioning scale in the BTOM was used to measure social functioning on admission (Table 8). The scale relates to a period of three months before admission and scores can range from 0 (poor social functioning) to 18 (good social functioning). The mean score of WHOS RTOD clients on admissions was 7.2, which is slightly higher than that of WHOS MTAR clients though comparable to other types of AOD clients.

Table 8: Comparison of social functioning scores

	N	Mean score
RTOD client group	75	7.2
MTAR client group	66	6.5
Rehabilitation clients – BTOM clinical trial	29	8.6
Opioid maintenance pharmacotherapy clients – BTOM clinical trial	280	7.7
Detoxification clients – BTOM clinical trial	107	7.4
Counselling clients – BTOM clinical trial	56	7.6

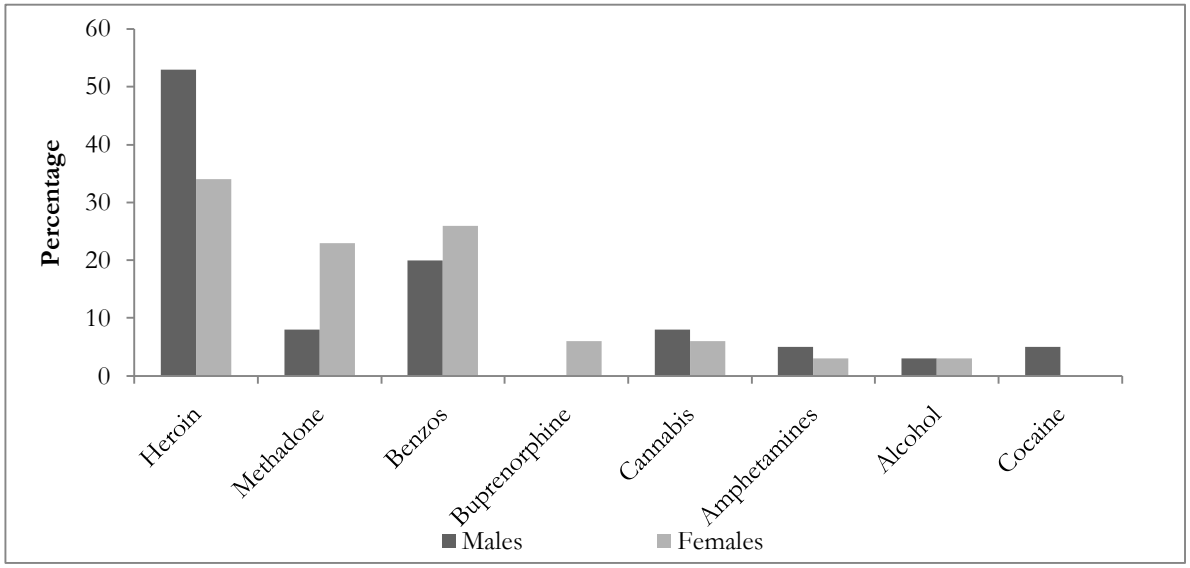
3.6 Drug use

3.6.1 Principal drug of concern

The most common principal drug of concern for both males and females was heroin (53% and 34%, respectively), followed by benzodiazepines (20% and 26% respectively) and methadone (8% and 23% respectively). Smaller proportions reported that their principal drug of concern was cannabis, amphetamines, alcohol or cocaine (Figure 1). There were no gender differences.

It must be noted that, with regards to principal drug of concern, staff may have been incorrectly recording the client's overall principal drug of concern, rather than the drug that the client's was currently having the most problem with, as can be seen by the low level of recent heroin use (Figure 2), which, however, is reported as the most common principal drug of concern. This issue has been addressed and more recent data are collecting this information accurately.

Figure 1: Principal drug of concern, by gender



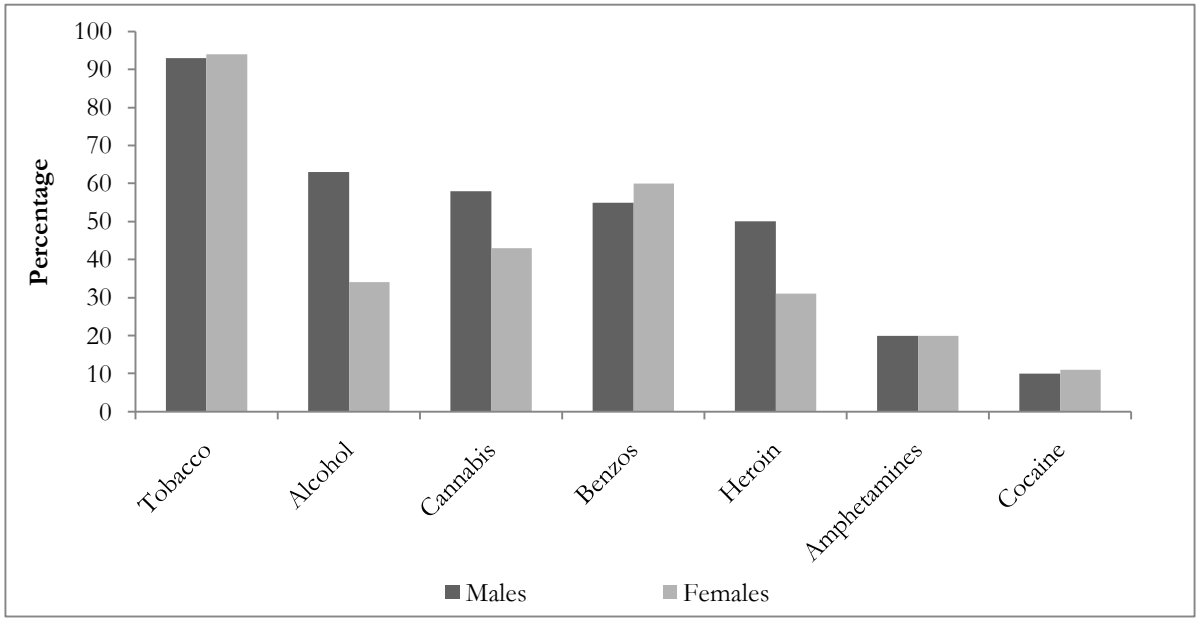
Dependence, as measured by the Severity of Dependence Scale (score of 4 or more), was almost universal. Ninety-five percent of males and 94% of females scored 4 or more.

Males were significantly more likely to inject in the preceding three months (75% vs. 43%, OR 2.5, CI: 0.094-0.67).

3.6.2 Recent drug use

The most common recently (past month) used drug for both males and females was tobacco (93% and 94% respectively) followed by alcohol (63%) and cannabis (58%) for males and benzodiazepines (60%) and cannabis (43%) for females (Figure 2). Males were more likely to have recently used alcohol (63% vs. 34%, OR 0.31, CI: 0.12-0.81), though there were no other differences. Median number of recently used drugs for males was 3 (SD 1.4, range 1-6) and median number of drugs used in the month prior for females was 2 (SD 1.24, range 1-6). There were no significant gender differences.

Figure 2: Recent drug use of WHOS RTOD clients, by gender



Tobacco was the most frequently used drug, followed by benzodiazepines (Table 9). The median number of cigarettes smoked a day was 30 (the equivalent of just over an average size pack). An average of five benzodiazepine pills were used per day of use. Males reported more frequent use of cannabis in the preceding month, though females reported a higher quantity of cannabis use per day of use. Heroin was reported to be used on a just greater than weekly average with a median of 1.5 to 2 shots per day of use.

Table 9: Recent use, median days used and median quantity

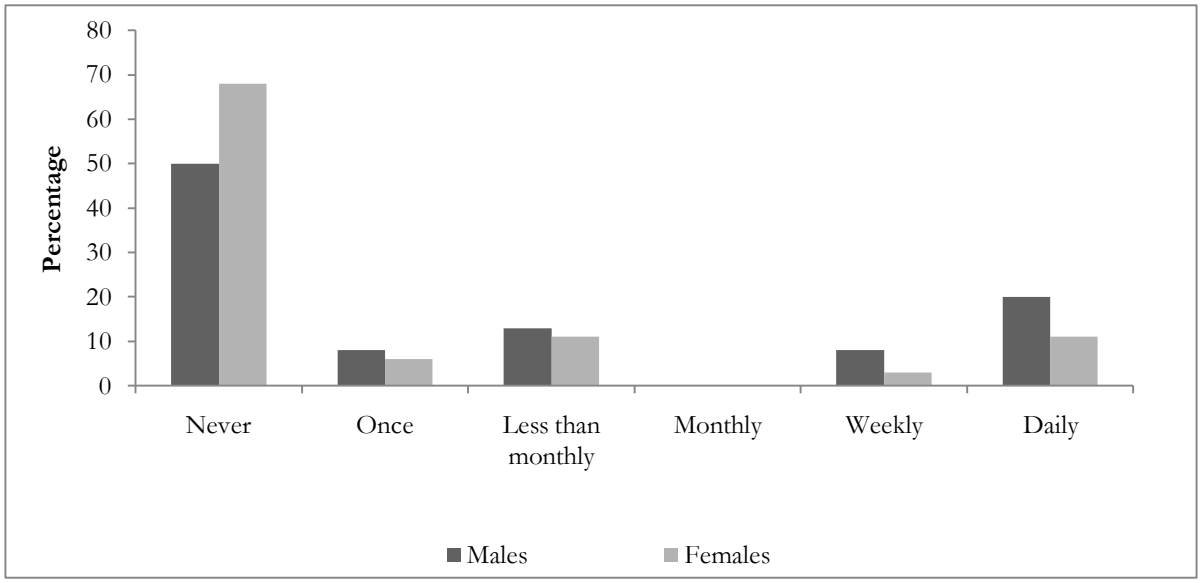
	Males (n=40)	Females (n=35)
Alcohol		
Recent use (%)	63	34
Median no. days used	4	2.5
Median no. drinks	5	5
Heroin		
Recent use (%)	50	31
Median no. days used	6	5
Median no. shots	2	1.5
Cannabis		
Recent use (%)	58	43
Median no. days used	10	3
Median no. cones	3	6
Cocaine		
Recent use (%)	10	11
Median no. days used	6	1.5
Median no. shots	2.5	3
Amphetamines		
Recent use (%)	20	20
Median no. days used	2.5	3
Median no. shots	2	2
Benzodiazepines		
Recent use (%)	55	60
Median no. days used	11	12
Median no. pills	5.5	5
Tobacco		
Recent use (%)	93	94
Median no. days used	30	30
Median no. shots	20	20

3.7 Risky behaviours

Clients were asked about their participation in risky behaviours such as operating heavy machinery (i.e. driving a vehicle) whilst under the influence of drugs or alcohol, engaging in unsafe sex, and needle sharing in the 12 months preceding admission.

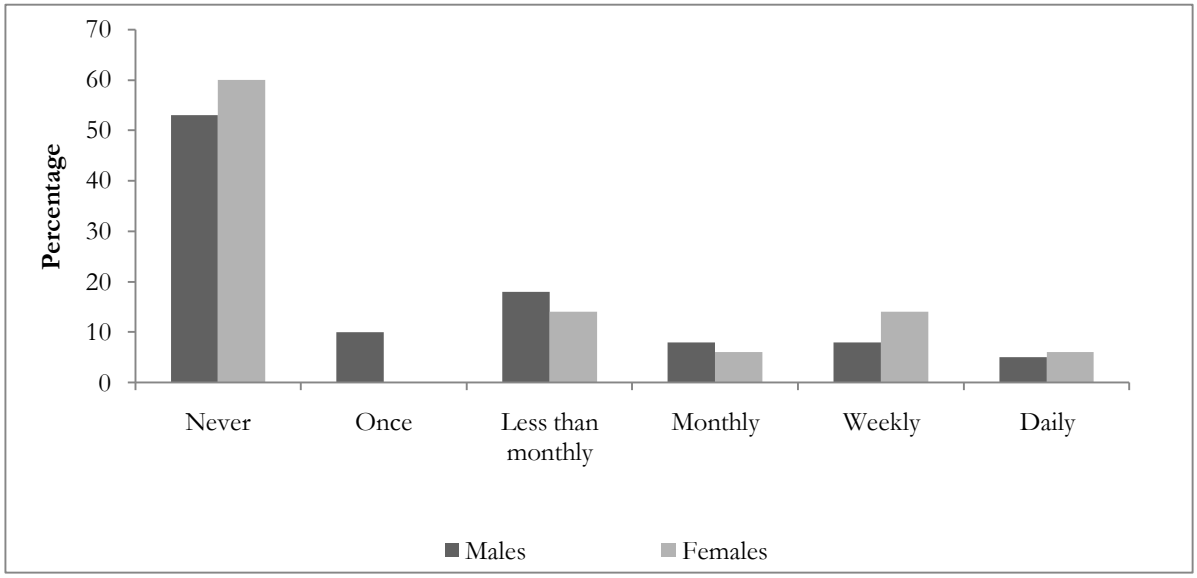
The majority of clients reported that they had 'never' operated heavy machinery (i.e. driven a vehicle); whilst under the influence, however, one-in-five males and one-in-ten females reported that they had done so on a daily basis. Females were less likely to engage in this behaviour than males.

Figure 3: Operating heavy machinery whilst under the influence in preceding 12 months



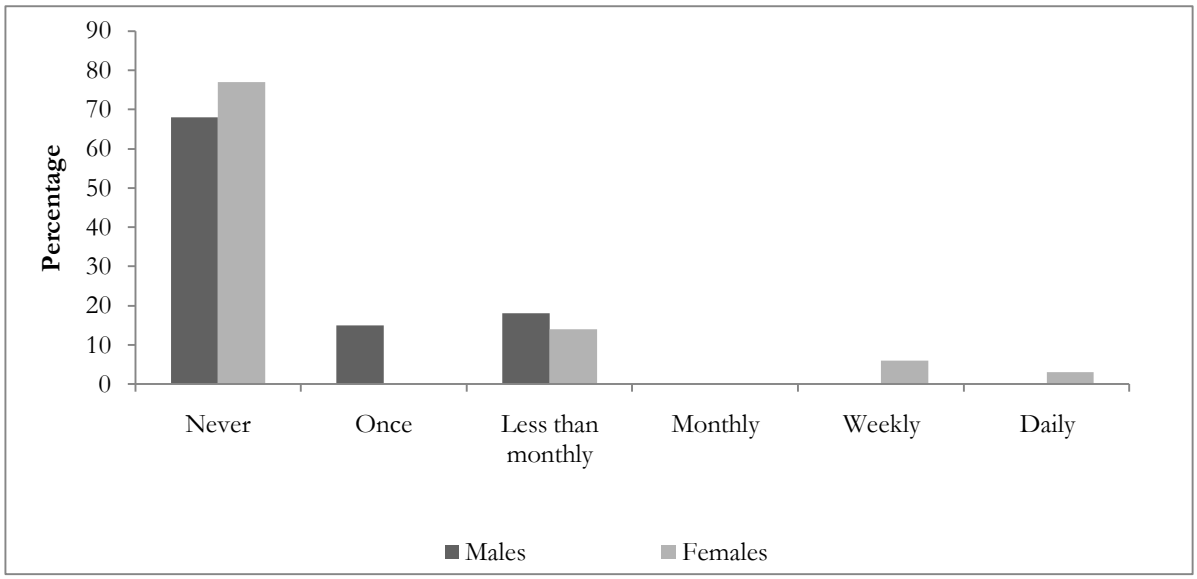
Again, whilst the majority of clients reported that they 'never' practised unsafe sex in the preceding 12 months, approximately two-fifths had done so more than once (Figure 4).

Figure 4: Engagement in unsafe sex in the preceding 12 months



Again, whilst the vast majority of clients reported that they had not shared needles in the preceding 12 months, approximately one-third had done so more than once. Very few reported that they had done so on a daily basis (Figure 5). Forty percent of males and 34% of females reported that they had shared injecting equipment in the preceding three months

Figure 5: Engagement in needle sharing in the preceding 12 months



3.8 Treatment seeking

Over two-fifths of clients were referred to WHOS RTOD by another drug treatment service (residential or non-residential) and smaller proportions either referred themselves or were referred through a court diversion (Table 10).

Table 10: Treatment referral and pharmacotherapy on admission

Variable	WHOS RTOD (N=74)		
	Total (n=74)	Males (n=39)	Females (n=35)
Referred to treatment by			
Self	17	23	11
Friend/relative	4	5	3
Drug treatment service	41	30	54
Court diversion	17	18	17
Other*	21	24	15

* Includes mental health, police diversion, hospital, non-health services etc.

3.9 Treatment motivations

The main motivation for entering treatment was emotional wellbeing (48%), followed by family relationships (31%), and legal concerns (17%) (Table 11). Females were more likely than males to come to treatment due to family relationship concerns (43% vs. 20%, OR 2.91 CI: 1.04-8.11). The main treatment goal of the vast majority of clients was stopping drug use (76%). Furthermore, the vast majority (78%) also indicated that within the three months prior to treatment they had begun to reduce or stop their drug use.

Table 11: Treatment motivation, goals and readiness

Variable	WHOS RTOD (N=74)		
	Total (n=74)	Males (n=39)	Females (n=35)
Concern that led to treatment (%)*			
Emotional wellbeing	48	53	43
Family relationship (including partner)	31	20	43
Health	11	10	11
Legal	17	20	14
Employment	0	0	0
Financial	3	3	3
Main drug-use-related goal			
Stopping use	76	80	71
Cutting down	7	5	9
Fulfilling mandatory requirement	4	0	9
Other	12	13	11
Readiness to change			
Satisfied with current drug use	0	0	0
Thinking about stopping or reducing, but not in next 30 days	5	3	9
Will stop or reduce in next 30 days	11	15	6
Past 3 months have stopped or reduced	78	80	77
More than 3 months ago stopped or reduced	3	0	6

* Clients could indicate more than one motivation

3.10 Pharmacotherapy at admission

All clients were on some type of pharmacotherapy when they were admitted to treatment (Table 12), the most common being methadone, followed by buprenorphine and buprenorphine-naloxone. Mean dose of methadone at admission was 87.5 mg (SD 39.47, range 7.5-160). Mean dose of buprenorphine was 16 mg (SD 6.61, range 8-28) and mean dose of buprenorphine-naloxone was 24 mg. There were no gender differences.

Table 12: Pharmacotherapy on admission

Variable	WHOS RTOD (N=74)		
	Total (n=74)	Males (n=39)	Females (n=35)
Currently on			
Methadone	85	85	86
Median dose (mg)	87.5	82.5	90
Buprenorphine	13	13	14
Median dose (mg)	16	16	16
Buprenorphine-naloxone	1	3	0
Median dose (mg)	24	24	

3.11 Treatment cessation

Length of stay and treatment cessation are present in Table 13. Median length of stay was 55 days (SD 46.18, range 2-210). There were no gender differences. Treatment completion (56%) was the most common reason for treatment cessation, followed by leaving against advice (25%) and leaving due to non-compliance (12%). Eighty-one percent of the sample stayed in treatment over seven days and 67% of the sample stayed in treatment over 30 days.

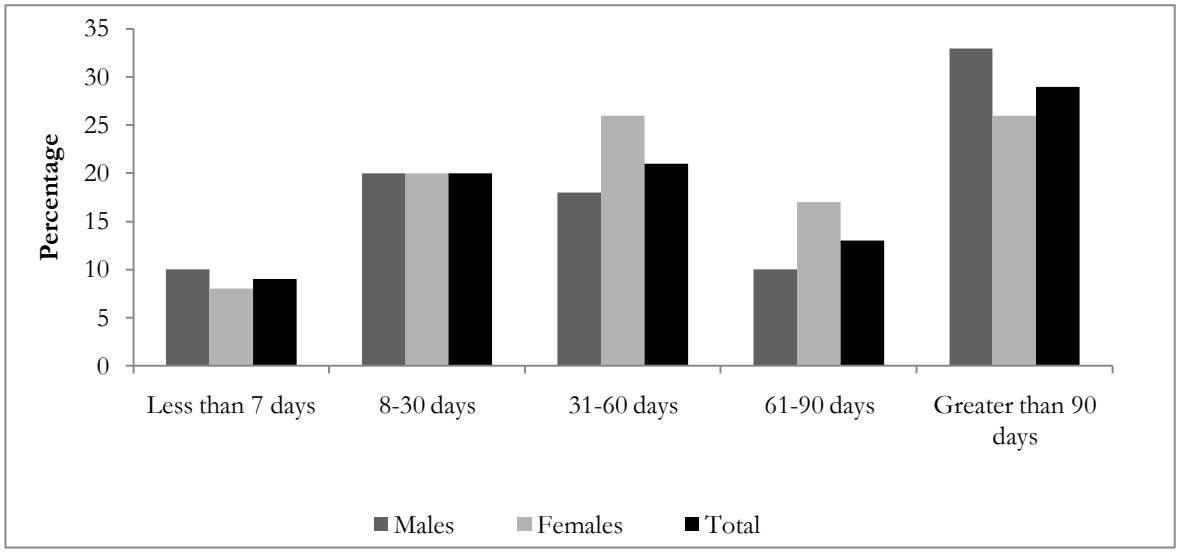
Table 13: Length of stay and treatment completion

Variable	WHOS RTOD (N=72)		
	Total (n=72)	Males (n=39)	Females (n=35)
Median length of stay	55	53.5	55
Reason for treatment cessation			
Treatment completed	56	60	51
Non-compliance	12	8	17
Left against advice	25	25	26
Left without notice	1	3	0
Referred	1	0	3

NB: 3 clients were still in treatment at RTOD at time of data analysis

As can be seen in Figure 6, only a small proportion of clients leave treatment within a week of admission. Equal proportions (approximately 20%) remain in treatment between eight and 30 days and 31-60 days. Remaining in treatment over 90 days was the most common.

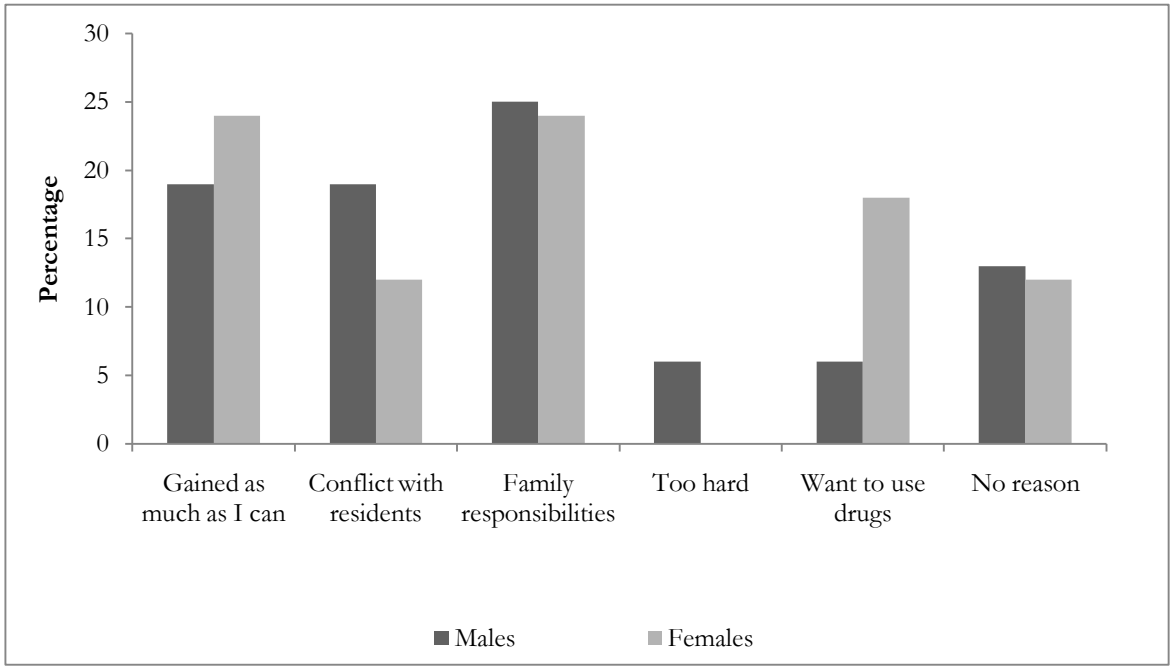
Figure 6: Treatment retention over a 90 day period



3.11.1 Non-treatment completers

Clients that did not complete treatment were asked reasons for leaving treatment (Figure 7). Main reasons for leaving treatment before completion were family responsibilities, gaining as much as one could from the program, conflict with other residents for males, and wanting to use drugs for females.

Figure 7: Reason for leaving of non-treatment completers



NB: data only for 11 men and 12 women. 12 cases of missing data. Clients may have left treatment before questions were asked.
NB: more than one response was allowed

Clients that left before treatment completion were also asked whether their health status had changed (Table 14). The vast majority (74%) felt that their health had improved after their treatment stay, and only one person felt that their health had become worse.

Despite not completing treatment, clients that left treatment early reported that they were either 'very satisfied' or 'satisfied' with their treatment from the service.

Table 14: Health status and satisfaction of treatment for non-treatment completers

Variable	WHOS RTOD (N=72)		
	Total (n=23)	Males (n=11)	Females (n=12)
Change in health status			
Improved	74	81	67
Same	17	18	17
Worse	4	0	8
Don't know	4	0	8
Satisfaction with service			
Very satisfied	38	50	27
Satisfied	57	50	64
Dissatisfied	0	0	0
Very dissatisfied	5	0	9

NB: There were 12 cases of missing data

3.12 Treatment outcomes

3.12.1 Pharmacotherapy

All clients' current pharmacotherapy and dose was recorded at the end of their treatment stay. Eighty-nine percent of clients were on methadone at treatment cessation, slightly more than 85% at admission. Median dose of methadone was 95 mg (SD 41.51, range 8-180), up from a median of 87.5 mg at admission (Table 15).

Ten percent of the sample were on buprenorphine at treatment cessation, from 13% at admission, though median dose remained the same at 16 mg (SD 7.6, range 10-28). One client was on buprenorphine-naloxone, and median dose was 22 mg, down from 24 mg at admission. Again, there were no gender differences in pharmacotherapy and dosage.

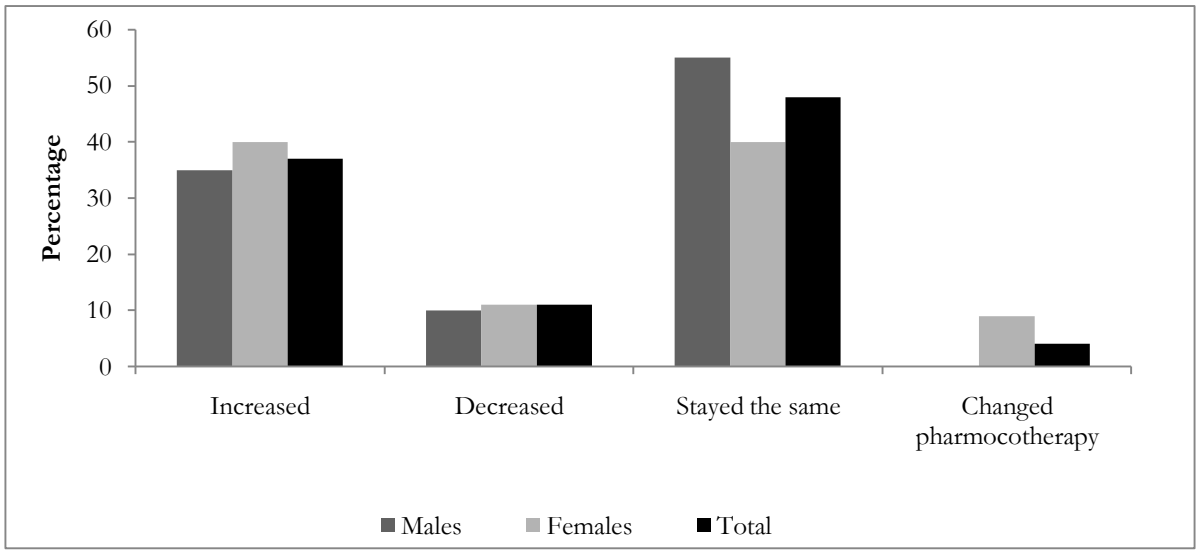
Table 15: Pharmacotherapy and dose at treatment cessation

Variable	WHOS RTOD (N=72)		
	Total (n=72)	Males (n=39)	Females (n=35)
Methadone (%)	89	85	94
Median dose (mg)	95	92.5	95
Buprenorphine (%)	9	13	6
Mean dose (mg)	16	16	14
Buprenorphine-naloxone (%)	1	3	0
Mean dose (mg)	22	22	0

NB: 3 clients were still in treatment at WHOS RTOD at time of data analysis

Whilst the majority of clients remained on the same pharmacotherapy dose from treatment admission to treatment cessation, a significant proportion had their pharmacotherapy dose increased (Figure 8). Much smaller proportions had their dose decreased or were changed to a different pharmacotherapy (i.e. from buprenorphine to methadone).

Figure 8: Changes in pharmacotherapy from treatment admission to treatment cessation

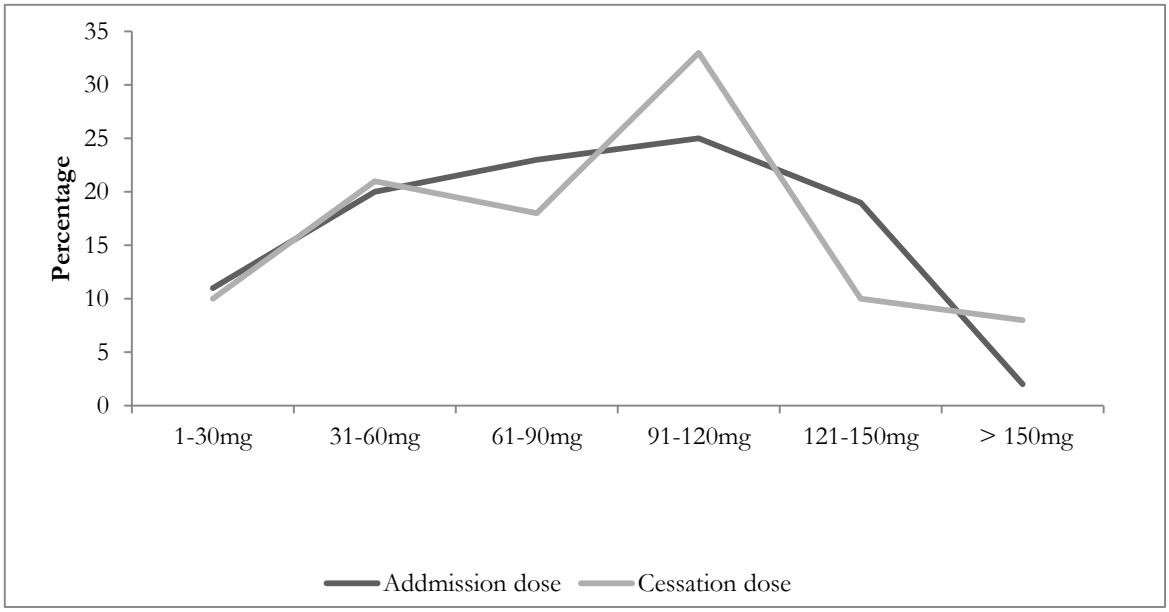


NB: 3 clients were still in treatment at WHOS RTOD at time of data analysis

Specifically, with regards to methadone, there was an increase in the proportion of clients that were receiving between 91-120 mg (an increase from 25% to 33%) and over 151 mg (an increase

from 2% to 8%) of methadone, and a corresponding decrease in the proportion of clients receiving 61-90mgs (a decrease from 23% to 18%) and 121-150mgs (a decrease from 19%-10%) of methadone at treatment cessation (Figure 8).

Figure 9: Changes in methadone dose categories from treatment admission to treatment cessation



NB: 3 clients were still in treatment at WHOS RTOD at time of data analysis

3.12.2 Mental health medication

Just under two-thirds of the sample were on a medication for mental health problems at treatment cessation (Table 16); this was comparable to admission (Table 5).

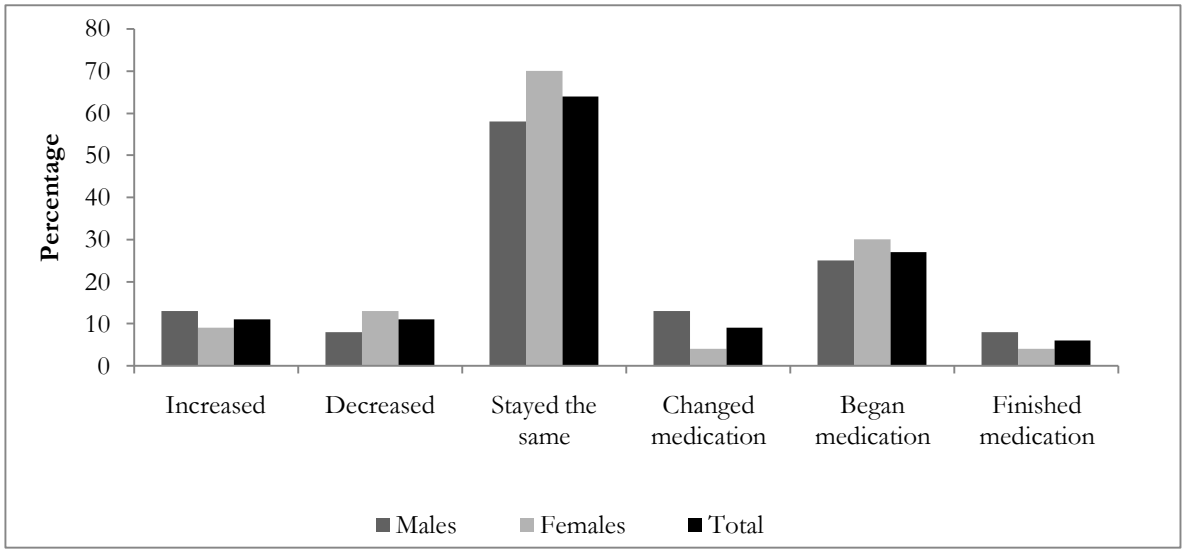
Table 16: mental health medication at treatment cessation

Variable	WHOS RTOD (N=72)		
	Total (n=72)	Males (n=39)	Females (n=35)
On mental health medication at treatment cessation (%)	63	67	60

NB: 3 clients were still in treatment at WHOS RTOD at time of data analysis

Whilst 64% of clients had their mental health medication remain the same from treatment admission to treatment cessation, a significant minority were prescribed a new medication (27%, either alone or in addition to their other medications), and similar proportions (11%) had their medication dose either increased or decreased from treatment admission to treatment cessation (Figure 10).

Figure 10: Change in mental health medication from treatment admission to treatment cessation

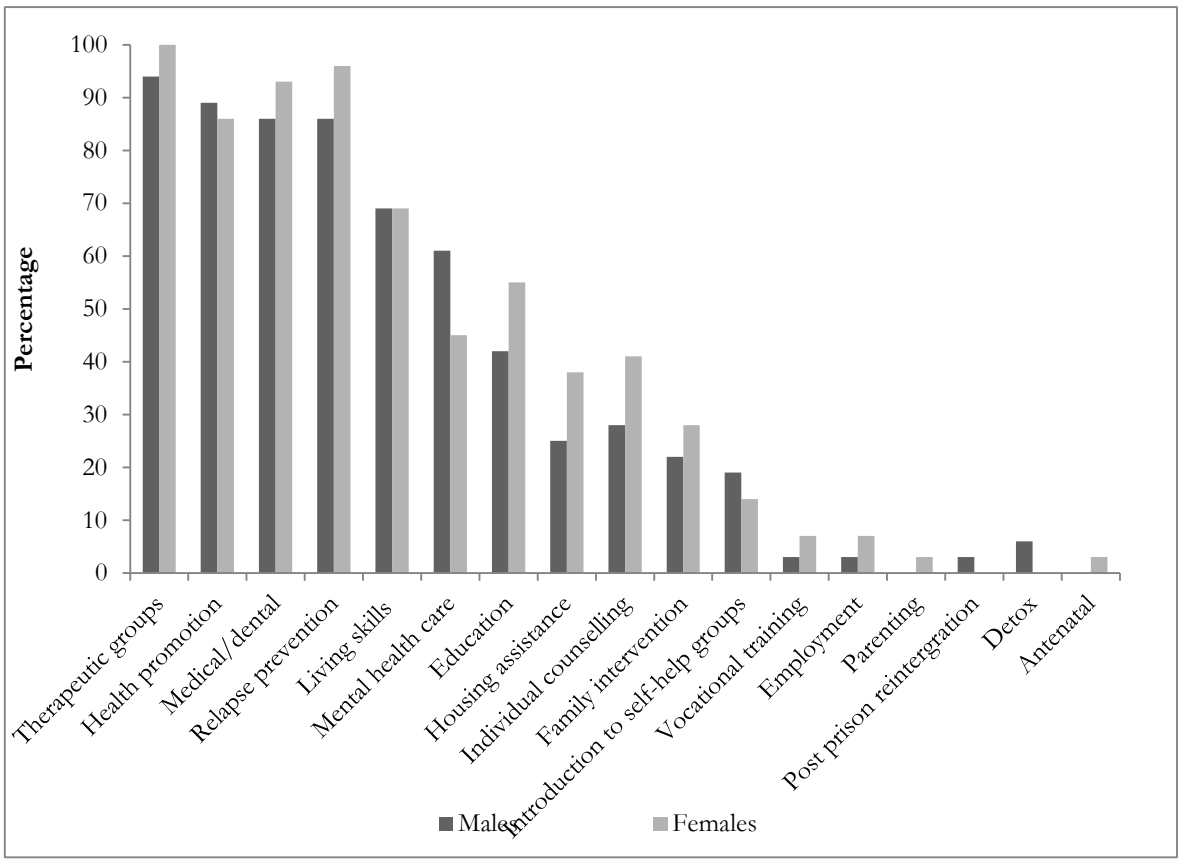


NB: 3 clients were still in treatment at WHOS RTOD at time of data analysis

3.12.3 Services utilised whilst in treatment

Clients indicated WHOS services they had utilised whilst in treatment at treatment cessation (Figure 11). Nearly all clients had been involved in therapeutic groups, health promotion, medical/dental check-ups and relapse prevention. Other common services utilised included living skills, mental health care, education, housing assistance, counselling and family intervention.

Figure 11: WHOS services utilised whilst in treatment



NB: data missing for 5 males and 6 females

One-quarter of the sample reported that they had attended formal counselling sessions whilst in treatment, on a median of one session per week (SD 0.8, range 1-4) (Table 17). Females were more likely than males to attend formal counselling sessions (37% vs. 15%, OR 3.35, CI: 1.11-10.12). All clients attended therapeutic groups, on a median of 15 times per week (SD 4.0, range 1-25). One-fifth had attended self-help groups whilst in treatment on a median of one session per week (SD 1.95, range 1-8).

Table 17: Treatment involvement

Variable	WHOS RTOD (N=72)		
	Total (n=72)	Males (n=39)	Females (n=35)
Attended formal counselling (%)	25	15	37
Median no. of formal counselling services per week	1	1.5	1
Attended therapeutic groups (%)	100	100	100
Median no. of therapeutic groups attended per week	15	15	15
Attended self-help groups (%)	20	23	17
Median no. self help groups attended per week	1	2	1

3.12.4 Treatment satisfaction

Just under 50% of all clients reported that they were 'extremely satisfied' with the service at treatment cessation, 27% were 'very satisfied' and 18% were 'satisfied'. Only one-in-ten reported that they 'not very satisfied' or 'very dissatisfied' (Table 18).

Table 18: Treatment satisfaction of all clients

Variable	WHOS RTOD (N=72)		
	Total (n=72)	Males (n=39)	Females (n=35)
Satisfaction with service			
Extremely satisfied	46	49	42
Very satisfied	27	26	29
Satisfied	18	17	19
Not very satisfied	5	3	7
Very dissatisfied	5	6	3

NB: No data for clients that were still in treatment

3.13 Re-admissions

There were 15 treatment episodes that were re-admissions. Of those clients that were re-admitted two-thirds (67%, n=10) went on to complete treatment.

3.14 Factors associated with treatment retention

A linear regression was conducted controlling for age, gender, recent poly-drug use, psychological distress and social functioning. The model was not significant. There appears to be no predictors of treatment retention.

3.15 Factors associated with treatment completion

A logistic regression was conducted controlling for age, gender, recent poly-drug use, psychological distress and social functioning. The model was not significant. There appears to be no predictors of treatment completion.

4.0 DISCUSSION

4.1 Main findings

There were a number of important findings from the current study. Firstly, the poor social functioning of clients presenting for treatment at WHOS RTOD. Secondly, the relatively high rates of treatment completion. Thirdly, the successful stabilisation of clients on pharmacotherapy and mental health medication. Finally, the apparent lack of differences between male and female clientele.

4.2 Profile of clients presenting for treatment

Mean age of clients presenting for treatment was early thirties and there were slightly more males than females. There were a high proportion of females identifying as Aboriginal and/or Torres Strait Islander. All clients reported that they were currently not working prior to treatment admission. Of those that had children under the age of 18 years old there was a high amount of DOCS involvement in the 12 months preceding treatment admission. There were also high levels of criminal history amongst the clients, with just under three-fifths reporting recent criminal involvement and recent arrests.

Furthermore, the majority of clients self-reported that their physical health was poor and there were high rates of both hospital admissions and overdoses in the 12 months preceding treatment admission. There were high rates of mental health diagnoses and high rates of mental health medication amongst treatment admissions. Over one-third reported a previous suicide attempt. Clients reported using a mean number of three drugs in the month preceding treatment admission and there were high rates of recent benzodiazepine use.

It can be seen from this client profile that clients presenting for treatment were in need of treatment and support. The clinical profile is one that is poor functioning and also associated with a chaotic lifestyle. Whilst this profile is quite similar to other treatment services, there are a number of important differences. In comparison to a previous study (Campbell, Darke et al. 2010) into WHOS drug-free services (Gunyah and New Beginnings) and the Methadone to

Abstinence Residential service (MTAR), whilst there are similarities in demographics, criminal history, suicidal history and drug use history, there are a number of differences with regards to physical and mental health and treatment referral.

Clients from WHOS RTOD were more likely to report a higher rate of previous mental health diagnoses (71%, compared to 59% for the drug-free services and 52% for the WHOS MTAR service) and were also more likely to be on prescription medication for mental health problems (63%, compared to 55% in the drug-free services and 48% in the WHOS MTAR service). Furthermore, clients from WHOS RTOD were much more likely to report that their health was poor when compared to the other services (32%, compared to 11% in both the drug-free services and WHOS MTAR). Clients from WHOS RTOD were also much less likely to refer themselves to treatment compared to clients from the drug-free services and WHOS MTAR (17%, compared to 43% in the drug-free services and 52% in the WHOS MTAR service). Additionally, there were no clients from WHOS RTOD that were employed at the time of admission; this is in comparison to 17% in the drug-free services and 10% in the WHOS MTAR service. Just over 40% were living by themselves, compared to 20% in the drug-free service and 11% from the WHOS MTAR service.

It can be seen that clients presenting to WHOS RTOD are in a much poorer condition socially, mentally and physically when compared to other treatment services. Furthermore, the low rates of self-referral, and high rates of residing alone, may suggest a lack of awareness of the need for help.

4.3 Treatment completion and retention

Treatment completion rates were high compared to the drug-free services (56% compared to 39%), though similar to WHOS MTAR (53%). Furthermore, many clients remained in treatment over 90 days. This is important since longer retention and treatment completion are both associated with better treatment outcomes (Darke, Williamson et al. 2006). This finding is also important when considering the clinical profile of clients presenting for treatment. As mentioned earlier, clients presenting for treatment were in a poor condition socially, mentally and physically; remaining in treatment enables treatment staff to address the needs of these clients both

medically and also through support and education. Clients not only received medical, dental and mental health support, but there were also high levels of education and support around health promotion, relapse prevention, living skills, education, housing assistance and counselling.

Additionally, there were high rates of service satisfaction from clients, with over 70% reporting that they were satisfied with the treatment they received at WHOS RTOD. These rates were similar in the clients that had also left the service prematurely, with a majority of these clients also reporting that their health had improved since treatment admission.

It is also of importance to note that completion rates of those that did leave treatment prematurely, and returned to WHOS RTOD at a later time, were over two-thirds. Only five clients did not complete treatment on subsequent admissions.

There were no predictors of treatment retention or completion. This finding is similar to previous research at WHOS that also found limited predictors of treatment completion (Campbell, Darke et al. 2010) and to other research that has examined predictors of completion and retention (Condelli and De Leon 1993; Nielsen and Scarpitti 2002). This finding suggests that there are many factors associated with treatment completion and retention and supports the notion that a non-discriminatory and non-judgemental approach to new admissions is the best practice.

4.4 Stabilisation of clients

One of the most important goals of the WHOS RTOD program is to stabilise complex needs clients that may be suffering socially, mentally or physically. In addition to providing support and education, clients also have their pharmacotherapy and mental health medication (if they are on or need mental health medication) reviewed. Just fewer than 50% of clients remained on the pharmacotherapy dose that they were on at admission. Consequently, just over 50% of clients had there pharmacotherapy dose reviewed and changed, suggesting that the does the client was on at admission was not the most appropriate.

Additionally, whilst their were similar proportions of clients on mental health medication at treatment admission and treatment cessation, there were a marked number of changes to medications and dosages. Whilst 64% remained on the same medication and dose at admission and treatment cessation, over one-third had their medication reviewed and modified. Over one-quarter were placed on a new mental health medication whilst in treatment. Again, this suggests that the medication and dose of mental health medication at admission, for many of the clients, was not the most appropriate.

As mentioned earlier, the clients presenting to WHOS RTOD were complex needs clients suffering from a magnitude of physical, social and mental health problems. These conditions and problems could have been exacerbated by the lack of being on the correct pharmacotherapy dose and mental health medication. The vast majority of clients reported that their health had improved at the end of treatment (even if they did not complete the program) and it would be expected that being on the correct medication and pharmacotherapy might enable clients to better function once out of treatment.

4.5 Gender differences

A final finding was the similarity between male and female clients. There were very few differences between the two in terms of demographics, drug use, current mental health and treatment retention. The similarity suggests that this is a homogenous group. It also adds support to the viability of a mixed gender service. This finding is similar to previous research with WHOS MTAR clients (Campbell, Darke et al. 2010).

4.6 Future directions

This report focused on the first 18 months of the WHOS RTOD programme. WHOS RTOD was successful in appealing to clients that are of complex needs and are therefore often considered too hard to rehabilitate. The success of the first 18 months suggests that such a service is necessary and would be greatly utilised by clients and members from the drug and alcohol field. The expansion of RTOD into rural areas and other states would be beneficial, considering it is the only one of its kind and limited to 10 beds at the present time.

Furthermore, whilst this research has documented the characteristics of clients entering treatment in the first 18 months of WHOS RTOD, it is necessary that these clients be followed-up in order to completely understand the effect that such a service may have on outcomes such as drug use, mental health, physical health, family, housing, and social functioning. Further research might also be able to document parts of the RTOD programme that are most beneficial to clients.

4.7 Conclusions

The types of clients presenting for treatment at WHOS RTOD were of complex needs and were functioning poorly socially, physically and mentally at the time of admission. Despite this, there was a high rate of retention and treatment completion. Furthermore, one of the main objectives of WHOS RTOD is to stabilise clients. This was achieved, as evidenced by the evaluation and review of pharmacotherapy doses and mental health medication and changes to these when necessary. The vast majority of clients were satisfied with the treatment they received and, furthermore, reported that their health had improved since treatment admission.

WHOS RTOD is the first service of its kind in Australia that has attempted to address an issue that has previously been neglected: the treatment of complex needs clients. The first 18 months of the service has been successful in attracting these clients to treatment and stabilising them and providing them with not only medical and mental health services, but providing support and education.

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