

**TO ENFORCE OR ENGAGE: THE RELATIONSHIP
BETWEEN COERCION, MOTIVATION AND THERAPEUTIC
ALLIANCE WITHIN COMMUNITY BASED DRUG AND
ALCOHOL CLIENTS.**

Presented By

Samantha Wolfe

B Psych (Hons)

This thesis is submitted to the

School of Psychology, University of Newcastle,

in fulfilment of the requirements of the degree of

Doctorate of Clinical Psychology

9th of January, 2012

Declaration

1. *I hereby certify that the work embodied in this thesis is the result of original research and has not been submitted for a university degree or other similar qualification to any other University or Institution.*

2. *The work in this thesis was carried out under the supervision of Dr Frances Kay-Lambkin, Research Fellow, Centre for Brain and Mental Health Research Faculty of Health, University of Newcastle; Associate Professor Jenny Bowman within the School of Psychology, The University of Newcastle; and Mr Steven Childs, Assistant Director of the Alcohol & Other Drugs Service at Northern Sydney Central Coast Health Service.*

3. *The conduct of this research was approved by the University of Newcastle Human Research Ethics Committee and by the Central Coast Area Health Service Ethics Committee 08/HARBR/78/79.*

Signed:Samantha Wolfe

Date:9/1/12.....

Acknowledgments

To my amazing supervisor Frances Kay - Lambkin, Thank you. Your selfless patience, support and kindness kept me going. Your encouragement, motivation and ability to make an insurmountable task a “piece of piss” is truly appreciated.

A BIG Thank you to my Mum. You are an inspiration and awesome in so many ways! I am eternally grateful for your unwavering support and especially thanks for instilling in me the importance of loved ones and laughter. I admire your ability to get on with things while keeping a smile on your face and I consider myself truly blessed to have you as a mum, my friend and my ally.

To my Wolfe Pack, Rachele, Michael and Amanda thank you for always being on my side, for listening to me waffle on and most of all for being the amazingly loyal, funny and special people that you are. Thanks to Tahnee and to my little rays of sunshine Malakye “Honeybear”, Peta “Peanut” and Luka “Pukie” for reminding me of the important things: cartoons, chocolate, fun and imagination. To my Grandmas – I am grateful to have you in my life and appreciate your love and support. You are both my soft landing with a coffee at the ready. Thanks Allan for letting me take over the house and the unending supply of coffee.

To my awesome friends, thank you for the wines, the chats and for believing that I could achieve this. I love you all and look forward to many more laughs and fun times, especially now that I have a load more free time! A special thanks to my uni friends - especially Jo, Dave and Al (aka Wirrell, Seddy and Alby) for sharing in this journey, for encouraging me and inspiring me.

To Alison, thank you for your support, your fabulous sense of humour, your limitless kindness and your friendship. You are an amazing human being. I have had a blast on the many adventures we have been on together and can't wait to see what fun the future holds.

Thanks you to the staff, my friends, at the Central Coast Drug and Alcohol Service for your support and for sparking my passion for working in this field. I would never have been able to complete my studies without your support. A special thanks to Steve Childs for your flexibility and for opening my eyes to the wonderful world of drug and alcohol counselling.

TABLE OF CONTENTS

Acknowledgements	iii
List of Tables	vii
List of Appendices	viii
Abstract	ix
1. A REVIEW OF THE LITERATURE	1
1.1 INTRODUCTION	1
1.2 COERCION.....	2
1.2.1 Defining Coercion.....	3
1.2.2 The impact of coercion on treatment engagement and outcomes.....	6
1.3 MOTIVATION.....	11
1.3.1 <i>Defining motivation</i>	12
1.3.2 <i>The impact of motivation on treatment engagement and outcomes</i>	13
1.3.3 <i>Understanding motivation in drug and alcohol populations: The Stages of Change Model</i>	18
1.3.4 <i>The impact of coercion on motivation for treatment</i>	19
1.4 THERAPEUTIC ALLIANCE.....	24
1.4.1 <i>Defining therapeutic alliance</i>	24
1.4.2 <i>The role and significance of therapeutic alliance in psychological treatment</i>	25
1.4.3 <i>The impact of therapeutic alliance on treatment engagement and outcomes</i>	26
1.4.4 <i>The impact of coercion on therapeutic alliance</i>	31
1.4.5. <i>The relationship between motivation and therapeutic alliance</i>	32
1.5 THE RELATIONSHIP BETWEEN COERCION, MOTIVATION AND THERAPEUTIC ALLIANCE.....	34
1.6 SYNTHESIS.....	36
1.7 CURRENT STUDY.....	37
1.8 RESEARCH QUESTIONS AND HYPOTHESES.....	38

RESEARCH MANUSCRIPT	39
ABSTRACT	41
2. INTRODUCTION	42
2.1 COERCION.....	43
2.2 MOTIVATION.....	45
2.3 THE IMPACT OF COERCION ON MOTIVATION FOR TREATMENT.....	46
2.4 THERAPEUTIC ALLIANCE.....	48
2.5 THE IMPACT OF COERCION ON THERAPEUTIC ALLIANCE.....	49
2.6 THE RELATIONSHIP BETWEEN COERCION, MOTIVATION AND THERAPEUTIC ALLIANCE.....	49
2.7 THE CURRENT STUDY.....	50
3. MATERIALS AND METHOD	51
3.1 PARTICIPANTS.....	51
3.2 PROCEDURES.....	51
3.3 STUDY DESIGN AND SETTING.....	51
3.4 MEASURES.....	53
3.4.1 <i>Treatment Motivation Questionnaire (TMQ)</i>	54
3.4.2 <i>Agnew Relationship Measure (ARM)</i>	54
3.4.3 <i>Opiate Treatment Index (OTI)</i>	55
3.5 STATISTICAL ANALYSIS.....	55
3.5.1 <i>Developing the coercion variable</i>	55
3.5.1 <i>Demographics and other presenting characteristics</i>	56
3.5.1 <i>Hypotheses 1, 2 and 3</i>	57
4. RESULTS	58
4.1 DEMOGRAPHICS AND OTHER PRESENTING CHARACTERISTICS AND COERCION	58
4.1.2 DEMOGRAPHIC AND OTHER PRESENTING CHARACTERISTICS, TREATMENT MOTIVATION AND THERAPEUTIC ALLIANCE.....	59
4.2 HYPOTHESIS 1	59
4.3 HYPOTHESIS 2	60
4.4 HYPOTHESIS 3	61

5. DISCUSSION	61
5.1 COERCION AND AOD USE OUTCOMES.....	62
5.2 MOTIVATION AND COERCION	63
5.3 THERAPEUTIC ALLIANCE AND COERCION.....	64
5.4 MOTIVATION AND THERPEUTIC ALLIANCE.....	65
5.5 COERCION AND AGE.....	67
5.8 LIMITATIONS OF THE CURRENT STUDY.....	68
5.9 CONCLUSIONS.....	69
6. EXTENDED DISCUSSION.....	74
6.1 PRESENTING CHARACTERISTICS OF CLIENTS: COERCION, MOTIVAITON AND THERAPEUTIC ALLIANCE.....	75
6.2 MOTIVATION AND COERCION	79
6.3 MOTIVATION AND SUBSTANCE USE.....	82
6.4 THERAPEUTIC ALLIANCE AND COERCION.....	86
6.5 THERAPEUTIC ALLIANCE AND SUBSTANCE USE.....	88
6.6 MOTIVATION AND THERPEUTIC ALLIANCE.....	92
6.7 PREDICTOR RELATIONSHIPS BETWEEN AGE, SUBSTANCE USE, COERCION AND FACETS OF MOTIVATION AND THERAPEUTIC ALLIANCE.....	94
5.8 LIMITATIONS OF THE CURRENT STUDY.....	95
5.9 FUTURE RESEARCH.....	98
7. REFERENCES	100
6.1 MANUSCRIPT REFERENCES	100
6.2 COMPLETE LIST OF THESIS REFERENCES	104
8. APPENDICES	110

List of Tables

- Table 1** Baseline substance use for coerced and non-coerced clients 71
- Table 2** The association between coercion (coerced vs. not coerced) and components of therapeutic alliance (bond, partnership, confidence in therapist, openness, client initiative) and treatment motivation (internal motivation, external motivation, help seeking, confidence in treatment) at baseline assessment. 72
- Table 3** Change in substance use between baseline and 15 week follow-up assessment as a function of coercion 73

List of Appendices

Appendix A	Client Information Sheet	111
Appendix B	Clinician Information Sheet	115
Appendix C	Client Consent Form	120
Appendix D	Clinician Consent Form	123
Appendix E	Ethics Variation Approval	126
Appendix F	Full method, study protocol article	128
Appendix G	Cannabis Clinic intake and recruitment procedure	148
Appendix H	MERIT intake and recruitment procedure	150
Appendix I	Counselling Team intake and recruitment procedure	152
Appendix J	Researcher recruitment script for own clients	154
Appendix K	Processes for clinicians and researchers	156
Appendix L	Initial interview assessment	158
Appendix M	Client therapeutic alliance measure (ARM)	171
Appendix N	Treatment Motivation Questionnaire (TMQ)	174
Appendix O	Additional results	178
Appendix P	Journal of Addictive Behaviors submission confirmation	189
Appendix Q	Psychology of Addictive Behaviors: Notes for Contributors	191

Structured Abstract

Alcohol and illicit substance use is a significant public health issue with considerable and mounting evidence highlighting the deleterious impact that even occasional use, has on the health and well-being of individuals (Marsh & Dale, 2006). Given the significant negative effects of substance use, abuse and dependence on the physical, emotional, social and psychological functioning of clients, continued vigilance is necessary to explore the mechanisms that perpetuate addiction and those that have positive effects on counselling intervention in these clients.

Three fundamental clinical issues consistently associated with treatment engagement and outcomes for psychopathology, especially in substance using populations, are: *coercion, motivation and therapeutic alliance*. It is well established that these factors play an integral role in the success of substance use treatment and it is widely accepted that higher motivation and therapeutic alliance are advantageous to treatment outcomes. Coercion on the other hand has in the past been regarded as a hindrance to effective drug and alcohol intervention characterised by treatment resistance and poorer engagement in the therapeutic process. More recently however, with improved definitions of treatment coercion, positive effects of coercion on treatment outcomes are being found.

The current study explored the presenting characteristics of clients attending a community drug and alcohol counselling service in relation to coercion, motivation, therapeutic alliance and substance use as well as the effect that these variables had on treatment outcomes 15 weeks later.

A total of 77 clients recruited from the Central Coast Drug and Alcohol Service participated in the study, completing a phone assessment upon treatment entry and again 15 weeks later. Results showed that facets of motivation and therapeutic alliance played

a significant role in client's substance upon presentation for treatment although coercion did not. Interestingly, differential substance use patterns emerged when exploring substance use type (alcohol, cannabis, methamphetamines, opiates, hallucinogens, heroin, cocaine, barbiturates, tranquilisers, hallucinogens, inhalants and tobacco) in relation to motivation, alliance and coercion. Coercion, motivation and therapeutic alliance were not predictive of substance use outcomes at 15 week follow up. However, due to a relatively small sample, further research is needed to examine the predictive effects of these variables in community drug and alcohol clients.

To enforce or engage: The relationship between coercion, treatment motivation and therapeutic alliance within community based drug and alcohol clients.

Alcohol and illicit drug use is a significant global public health issue. In 2007, nine out of ten Australians over the age of 14 had consumed alcohol and two of five had used illicit drugs (AIHW, 2007). There is considerable and mounting evidence highlighting the deleterious impact that substance use, abuse and dependence has on physical, emotional, social and psychological functioning (Marsh & Dale, 2006). The high prevalence combined with the substantial harm associated with substance use highlights the need for effective and targeted intervention for drug and alcohol use and its associated problems.

The Australian Institute of Health and Welfare (AIHW) found that people who had used an illicit substance within the last 12 months were twice as likely to report high to very high psychological distress, double the rate reported by people who had not used (AIHW, 2007). Given that even occasional illicit substance use can be detrimental to one's health and quality of life, continued vigilance in exploring the mechanisms that perpetuate addiction, and the therapeutic tools and strategies that motivate clients to enact positive behaviour change is needed.

Drug and alcohol clients are heterogeneous, with a vast array of factors contributing to the complexity of addiction treatment. These include variable social supports, education, referral source, mental health co-morbidity, primary drug of choice, pattern of substance use and personal characteristics of the individual (Marsh & Dale, 2006). DiClemente, Nidecker and Bellack (2008) suggest that clients with drug and alcohol problems have more severe cognitive impairment, poorer insight and decision making skills, as well as diminished

ability to identify the need for treatment, making engaging these clients in therapy difficult. Klag, O'Callaghan and Creed (2005) indicate that anti-social characteristics, impulsivity and poor emotional regulation are often observed in drug and alcohol clients. These behaviours make effective treatment engagement, establishing and working toward treatment goals and facilitating positive and sustainable behaviour change in counselling, challenging. Three fundamental clinical issues have been consistently associated with treatment engagement and outcomes for psychopathology, especially in substance using populations. These factors are: *coercion*, *motivation* and *therapeutic alliance*.

Given the link between criminal behaviour and drug and alcohol use (Wild, Roberts & Cooper, 2002), poor and inconsistent motivation (Klag, O'Callaghan & Creed, 2005) and a general distrust amongst substance using clients of perceived authority (Shearer & Ogan, 2002), better understanding of the significance and role of motivation, therapeutic alliance and coercion in drug and alcohol clients is imperative.

Coercion

Marshall and Hser (2002) suggest that as many as half of all referrals to community-based substance abuse treatment have some involvement with the criminal justice system. A substantial proportion of clients presenting to addiction services are coerced and seeking help due to external pressure from services, such as Probation and Parole, child protection agencies and the criminal justice system (Ondersma, Winhusen & Lewis, 2010). Probation and Parole services in Australia assist courts and Parole Boards to assess whether offenders are suitable for community-based orders, to enforce any conditions of the courts and Parole Boards, and to assist offenders to successfully complete such orders, including drug rehabilitation orders (QCS, 2010). The high prevalence of coercion within substance using populations is explained partly

by the illicit nature of the substance use, the impulsivity associated with intoxication and the high incidence of abuse, neglect and other child protection concerns, which leads to negative consequences and engagement in health, welfare and legal services (Ondersma, Winhusen & Lewis, 2010). The high incidence of legally referred clients, and those otherwise involved in the judicial system, highlight the importance of understanding the role and impact of coercion in treatment initiation and substance use outcomes in drug and alcohol clients.

Defining coercion

Klag, O’Callaghan and Creed (2005) identified two distinct types of legally coerced clients; *compulsory* and *coerced*. *Compulsory* treatment is that which necessitates the client to attend treatment as outlined in a legal order, with the client sentenced to participate in specified treatment. *Coercion* provides clients the choice as to whether they utilise an opportunity for treatment or not, although the presence of some duress is acknowledged (Prendergast, Greenwell, Farabee & Hser, 2009). Coercion in this sense, while still founded on recommendations of the legal system, is usually characterised by diversionary programs such as the MERIT (Magistrates Early Referral Into Treatment) program operating within NSW Health (Pasey, Flaherty & Didcott, 2006). Another significant difference between compulsory and coerced treatment is that the former does not involve consent (Seddon, 2007). This has important implications for client’s perceived autonomy and motivation in treatment which will be further discussed throughout the current study.

Operational definitions of coercion in the existing literature have been inconsistent and undermine the complexity of this construct in addiction populations. Traditionally, coercion was exclusively defined by referral source, that is, those required to attend and/or who are referred by the legal system (Klag,

O’Callaghan & Creed, 2005). This resulted in a fundamental oversight in the literature with coercion research founded on the assumption that only clients referred by the legal system are coerced. Defining coercion in this way undermined the significance of other equally important sources of coercion for drug and alcohol clients. For example, Polcin and Weisner (1999) found that 50% of clients who reported legal pressure to enter drug and alcohol treatment also identified coercion from at least one other source, including family, social supports and health care professionals. Furthermore, definitions of coercion based on referral source such as legal mandate, infers that non-mandated clients are seeking treatment of their own volition, which is often inaccurate (Sullivan et al. 2008).

Klag, O’Callaghan and Creed (2005) also highlight the important difference between formal and informal coercion as opposed to legal coercion. They define informal coercion as the pressure exerted by familial and social supports, including extrinsic identification of problematic substance use, threats and negative interpersonal consequences associated with continued drug and alcohol use. Formal non-legal coercion is generated from sources removed from the person; specifically employers, health professionals, and government agencies such as Centrelink, who may be providing welfare and other supports to the person. Legal coercion is that imposed by the court system through legal sanctions and directives.

While it is recognised that for legally coerced clients, the decision not to attend drug and alcohol treatment likely results in negative consequences, in the form of legal sanctions and/or incarceration, the fundamental provision of choice for these clients is thought to indirectly foster the individual’s sense of autonomy, and their motivation (internal as well as external) to engage in the therapeutic process (Klag, O’Callaghan & Creed, 2005).

Self-Determination Theory proposes that individuals have an innate desire for

autonomy and that attempts at behaviour change whereby autonomy is fostered, enables the integration of the change with the individual's values. This ultimately has positive effects on the success and sustainability of this change (Deci & Ryan, 1985). Therefore, while coerced clients may experience external pressure to participate in treatment, Self-Determination Theory proposes that the individual's perception of control and autonomy in attending treatment has a significant impact on whether the clients consider themselves involuntary, and therefore on their commitment to treatment and subsequent treatment outcomes.

Coercion must be accurately defined to ensure that the relationship between pressure and desire to change is understood, minimising any misleading assumptions posited about coercion, drug and alcohol clients and the negative effect that this has on treatment (Wild, 2006). The assumption that coerced clients are automatically primed to resist treatment due to the influence of external pressures, and are therefore less likely to engage and have positive treatment outcomes, is detrimental to the potential of these clients to make positive changes in regard to their substance use, as well as other psychosocial factors.

Research into the influence of coercion on drug treatment and therapeutic outcomes have been inconsistent, which is attributed in part to traditionally flawed conceptualisations of this coercion not adequately accounting for choice in the therapeutic process (Wild, Newton-Taylor & Alletto, 1998). However, more recently, results indicate that coerced clients perform similarly in therapy to non-coerced clients (Farabee, Prendergast & Anglin, 1998; Kelly, Finney & Moos, 2005).

Wild, Newton-Taylor and Alletto (1998) suggest that due to the significant heterogeneity of drug and alcohol clients as well as the fundamental differences evident in any subjective experience, it is crucial to examine whether client's perceive that they are coerced rather than merely considering referral source. The current study

will therefore investigate client perceptions of coercion and the subsequent influence of this construct on treatment engagement and outcomes.

The impact of coercion on treatment engagement and outcome

The majority of the research into coercion in drug and alcohol treatment aims to identify the interaction of coercion and motivational measures such as engagement, treatment initiation and retention (Wild, Roberts & Cooper, 2002). There is increasing recognition of the importance of readiness for change in achieving and maintaining positive substance use outcomes, which is theorised to be lower in coerced clients, with change initiated at least in part to fulfil legal requirements and minimise external pressures (Wild, Newton-Taylor & Alletto, 1998). Logically then, coerced clients should have poorer treatment outcomes, especially longer-term and when the legal requirements are fulfilled, compared to non-coerced clients. However, research studies have found differential effects, positive, negative and indifferent, of coercion on retention and engagement in treatment, and this disparity has continued throughout the literature (Stark, 1992).

Shearer and Ogan (2002) examined treatment resistance and coercion in 160 male substance users in prison or residential therapeutic communities (probationary and pre-release). Results showed that coercion was associated with poor treatment engagement and significantly higher treatment resistance in clients who perceived that they had been pressured or coerced into treatment; with higher resistance evident in the prison sample. Those who were incarcerated also reported significantly higher isolation, counsellor distrust, cynicism, compliance and lower self disclosure than the probationary and pre-release conditions when presenting to treatment. This has negative implications for the quality of their engagement in treatment and the therapeutic

process. However, Shearer and Ogan (2002) indicated that a 20% reduction in subjective treatment resistance could be achieved if the client perceived that they were choosing to engage in treatment, whether they had been directed to treatment or not. This suggests a potential for clients to achieve optimal therapeutic benefit when taking ownership for treatment commitments.

In line with Shearer and Ogan (2002), Prendergast, Greenwell, Farabee and Hser (2009) suggest that clients who are coerced to attend treatment are not necessarily unwilling participants in the treatment process. They investigated coercion in over 700 non-violent offenders recruited to treatment from the legal system as part of a substance use diversionary program. Their results indicated that, although all of their participants were legally coerced to attend treatment, the participants felt that they had exercised choice in entering treatment to a greater degree than they felt coerced to do so. The authors found that higher perceived coercion was associated with lower motivation, and subsequently that greater autonomy was related to higher motivation for treatment. However, despite high levels of ambivalence and low problem recognition among the participants, they rated higher than expected on measures of treatment initiative. This indicates that while clients who feel pressured to attend treatment may initially report lower motivation, there may be potential benefits of coercion in legally mandated substance using populations. This has important implications for community-based treatment, especially as community-based clients are likely exposed to a lesser degree of formal coercion and pressures to attend and maintain treatment than those in in-patient or residential settings.

Wild, Newton-Taylor and Alletto (1998) investigated the effects of coercion in a sample of 300 community drug and alcohol clients and found that coercion was not significantly related to substance use outcomes. However, the authors note that they

did find a non-significant, negative trend and suggested that with improved power this relationship may be clearer. Their results also showed that mandated status predicted perceived coercion, with higher perceived coercion reported in clients directed to treatment by the legal system. Interestingly, Wild, Newton-Taylor and Alletto (1998) found a significant number of clients who reported pressure to attend treatment did not identify this pressure as coercive. Coercion in this study was based on client reports of reasons for engaging in treatment, such as court or employer, and incorporated all clients who reported legal involvement. However, those who reported that they were mandated into treatment from other sources such as employers, but had no ongoing legal involvement, did not perceive that they were coerced into treatment. Interestingly, a third of non-mandated clients in this study reported external pressure to attend treatment and perceived coercion was present. This highlights the significance of examining perceived and legal coercion separately, with results indicating legal mandate does not equate to subjective experience of coercion, nor is perceived coercion restricted to legal mandate. This is further evidence that conceptualising coercion based solely on referral source is insufficient and suggests a potential negative relationship between higher coercion and substance use change.

Contrary to the aforementioned study, others have shown that coerced clients achieve similar or better substance use reduction compared to voluntary clients (Farabee, Prendergast & Anglin, 1998; Greigore & Burke, 2007; Kelly, Finney & Moos, 2005).

Farabee et. al. (1998) reviewed 11 studies that sought to investigate the effects of coercion on drug treatment outcomes. Their study highlighted that the relationship between substance use and coercion is both complex and inconsistent with five studies reporting a positive relationship between coercion and drug treatment outcomes, two reported a negative relationship with coerced clients

demonstrating poorer treatment outcomes and the remaining four studies found that coercion had no significant influence on substance use.

Kelly, Finney and Moos (2005) however, found that their mandated clients had significantly better treatment outcomes than their non-mandated clients as well as those involved with the legal system but not coerced into treatment. The coerced participants in their study were significantly more likely to be abstinent and in remission than the others who were not coerced at 1 year follow up, compared to non coerced participants.

Gregoire and Burke (2007) investigated substance use outcomes in 141 individuals receiving drug and alcohol in-patient treatment at assessment and follow up, six and twelve months after completing treatment. Results showed that coerced clients reported significantly less substance use at six month follow up, were more likely to report abstinence, and had lower severity of dependence scores than their non-coerced counterparts. Gregoire and Burke (2007) also suggest that the impact of legal pressure remained constant throughout treatment, while other coercive influences such as family and employers had variable influence. The results of this study suggest a positive relationship between coercion and substance use outcomes which were maintained six months post-treatment. Unfortunately, the study did not examine substance use type and as with the previous studies mentioned, coercion was inadequately defined without consideration of client's perceptions of coercion. The current study will add to this literature by examining the influence of coercion and client perceptions on the use of specific substances over time.

The inconsistent definitions of coercion and substantially different characteristics of the participant groups examined in the aforementioned studies, undermines the usefulness of the possible conclusions, and may explain the contradictory findings regarding the role of coercion in substance use outcomes.

Similarly, the majority of research in this area focuses on residential and in-patient treatment, and does not explore the complexities of community-based drug and alcohol treatment. The current study contributes to this literature by examining the effect of coercion on substance use outcomes in a community sample of real world drug and alcohol clients.

As mentioned, coercion can be perceived from a variety of sources including social, financial and familial (Polcin & Weisner, 1999) and there is some evidence that pressure from family and friends has a more significant influence on an individual's attendance and compliance with drug and alcohol treatment (Marlowe, Merikle, Kirby, Festinger, McLellan & Thomas, 2001).

Marlowe et al. (2001) interviewed 415 drug and alcohol clients about their motivations and reasons for presenting to treatment. They found that social and financial influences better accounted for attendance, improved substance use outcomes and treatment retention than legal coercion in their sample of court mandated clients.

Similarly, Wild, Newton-Taylor and Alletto (1998), indicated that interpersonal pressures exerted more influence over participant's behaviour in seeking treatment, and was associated with higher reported perceived coercion, compared to those whose pressure was generated from formal or legal sources. It is reasonable to expect then, that clients presenting to treatment would experience some degree of social, familial and financial pressures, with the addition of legal coercion in those mandated by the courts. It is therefore reasonable to hypothesise that coerced clients will have significantly higher external motivation than non-coerced clients at treatment presentation. Considering the benefits of external pressures, through the avoidance of negative consequences motivating clients to engage in treatment and to subsequently make positive changes with their substance use, it is also reasonable to expect that this

will have a significant impact on substance use outcomes. We therefore expect that clients with high external motivation will report significantly better substance use outcomes than those with low external motivation.

It thus remains important to comprehensively understand coercion and other influences on the behaviour and the progress of clients attending drug and alcohol treatment services, in order to maximise the therapeutic benefits achieved in therapy. It is clear that assessing client's perception of coercion and accurately incorporating the vast array of formal and informal pressures that lead clients to therapy is necessary, however has often been overlooked in the existing literature. The current study sought to overcome some of the past flaws in conceptualisations of coercion in considering the potentially differential impact of legal coercion, perceived coercion or the combination of these, on the relationship between AOD use, treatment motivation and therapeutic alliance.

These coercive influences are thought to affect a person's motivation for treatment, with lower motivation in clients forced into counselling. Motivation therefore is integral in understanding the role and impact of coercion on drug and alcohol treatment.

Motivation

Motivation is considered crucial to the therapeutic process. It is well established that motivated clients have significantly better treatment outcomes than those individuals who are not motivated to engage in therapy (Hiller, Knight, Leukefeld & Simpson, 2002; Longshore & Teruya, 2006; Marsh & Dale, 2006). Motivation is an integral part of treatment initiation, help seeking behaviour, treatment retention, positive substance use outcomes and long term maintenance of therapeutic gains (Cahill et al.2003). Melnick et al. (2001) suggest that clients who are effectively engaged in treatment have better session attendance, report more favourable perceptions of

treatment, develop better therapeutic relationships with their therapist, report more confidence in the benefits of treatment and have better therapeutic outcomes than those who are less engaged. These studies highlight the benefits of motivation in drug and alcohol clients, which extend beyond treatment outcomes, positively influencing client's experience of treatment. This has potentially significant clinical implications for re- engaging clients in drug treatment in future, if required.

Defining motivation

Motivation is a multidimensional construct, which encompasses the internal desires and urges felt by a client, external pressures and goals that influence the client, perceptions about the risks and benefits of behaviours to oneself, and cognitive appraisals of the client's situation (Centre for Substance Abuse Treatment, 2009). In the context of substance use, internal motivation encapsulates emotional, cognitive and physical internal factors; including distress, desire to enact change, discontentment with current circumstances and recognition of substance use as problematic (Hiller, Knight, Leukefeld & Simpson, 2002). Conversely, external motivation relates to that which is derived from external pressures, including consideration of the consequences of continued behaviour, such as loss of family, employment or income. Internal and external motivation are conceptually linked, although high scores on one construct does not necessarily equate to low or high scores on the other (Farabee, Nelson & Spence, 1993; Farabee Predergast & Anglin, 1998). An individual may have high internal and external motivation or high internal but no external motivation. Motivation is considered to be a transient phenomenon that is experienced on a continuum with each individual having some degree of internal and external motivation (Klag, O'Callaghan & Creed, 2005).

Another component of motivation discussed in the literature, is the

differentiation of the focus of motivation, whether that be motivation for behaviour change or motivation for treatment. Both of these areas of motivation are important in the engagement and treatment of substance using clients and have been shown to have beneficial effects on substance use outcomes and retention in treatment (Marsh & Dale, 2006).

The impact of motivation on treatment engagement and outcomes

There is inconsistent evidence regarding whether internal or external motivation better predicts positive treatment outcomes in drug and alcohol clients. While external motivation is thought to be advantageous in compelling some individuals into therapy that perhaps otherwise would not have initiated treatment, it is generally thought that internal motivation is associated with an internal desire for change and is beneficial in retaining clients in treatment etc. (Hiller, Knight, Leukefeld & Simpson, 2002). The general consensus in the literature is that any motivation to attend treatment, internal or external, is beneficial for therapeutic outcome. However, one may have the desire to change, but not the resources (cognitive, emotional, psychological, and social) to enact change. This must be considered when working with a client group with higher reported levels of abuse and trauma, and low socioeconomic status; common issues amongst people seeking treatment for drug and alcohol problems (Marsh & Dale, 2006). This highlights the complexity of human experience and thus potential for variation in motivation in this population.

Rosen et al. (2004) suggest that motivation, especially in relation to criminal offenders, is complex, as external motivation does not necessarily affect intrinsic motivation despite both having positive impacts on treatment retention (Knight, 2000). It is thought external motivation has significantly positive effects on treatment retention, with those high in external motivation attending treatment longer. In contrast, the primary advantage associated with internal motivation is related to

readiness to commit and enact change (Prendergast et. al., 2009). Clients who are internally motivated are thought to be more advanced in their recognition and ambition for change than their externally motivated counterparts who often find themselves in treatment unexpectedly.

Early research by DeLeon and Jainchill (1986) investigated the relationship between external and internal motivation, readiness to change and treatment drop-out in 400 clients attending a residential rehabilitation facility for substance abuse. They found that internal motivation was associated with better retention in treatment (short and long term). Those with low internal motivation ceased treatment earlier than those with high internal motivation, ultimately impacting on their ability to engage and receive longer term intervention if needed. It was hypothesised that perhaps this could be explained by a relationship between the level of internal motivation and the severity of dependence and/or the need for change.

McBride et al. (1994) conducted a study comparing intrinsic and extrinsic motivation in tobacco, cannabis and cocaine users (n=1709). The study utilised the Reasons For Quitting (RFQ) questionnaire, which was adapted for cocaine and cannabis use (see McBride et.al. 1994, for details on the validity and consistency of this adaptation) and three dimensions arose from a factor analysis; self control, social influence (extrinsic motivation) and health concerns (intrinsic motivation). Results showed that tobacco users reported significantly higher intrinsic motivation to attend and engage in treatment than cannabis and cocaine users, with cannabis users reporting the lowest internal motivation. Cannabis and cocaine users rated significantly higher desire for self-control as motivation for substance use change than did tobacco users, while cocaine users rated higher external motivation for initiating treatment compared to both cannabis and tobacco smokers. These results suggest differential motivational profiles may be present for participants using different substances at treatment entry.

There may also be a difference in motivation between illicit and licit substances, which may be attributed to the lower acceptability of illegal substances and subsequent pressure from external forces to change, as well as differential intoxication effects of substances (McBride et al., 1994). However, McBride et al. (1994) neglected to explore the relationship between motivation and other common substances such as amphetamines, heroin, opiates, hallucinogens and inhalants. Further research is needed to better understand the unique interaction of substance use type and motivation, and the current study will seek to address this.

The benefits of extrinsic motivation in increasing the likelihood of clients seeking help, attending drug and alcohol treatment, and short term retention in treatment, is well established (Cahill et al, 2003; Klag, O'Callaghan & Creed, 2005; Marlowe, 2001). Hiller et al. (2002) suggest that external motivation is crucial to avoiding premature drop out and cessation of treatment, which threatens not only the client's potential to make significant change with their substance use and other psychosocial issues, but also their perception of the usefulness of therapy for future.

Simpson, Joe and Rowan-Szal (1997) interviewed 400 clients admitted to a drug and alcohol in-patient unit at intake and 12 month follow up about their substance use, criminality and demographic information. They found that high motivation at treatment entry was associated with significantly better treatment outcomes in relation to substance use, as well as a reduction in the prevalence of criminality compared to those participants reporting low motivation. They also found that pre-treatment motivation was a significant factor in predicting positive treatment outcomes at twelve month follow up. Similarly, at follow up, higher pre-treatment motivation was associated with a significant improvement in reported crime with a 50% reduction; similar improvements in reported opiate use and considerable improvements in psychosocial functioning including mental health and self-esteem were also found.

Unfortunately, this study overlooked the differentiation between internal and external motivators for change, and the possibly variable influence of these types of motivation on treatment outcomes in their substance using population.

Cosden, Basche, Campos, Greenwell, Barazani and Walker (2006) found that motivation was significantly positively related to severity of cocaine, alcohol, cannabis, heroin and methamphetamine use in a sample of 578 legally mandated criminal offenders participating in drug court. Treatment completion was predicted by motivation, with higher motivation associated with better completion rates. These results suggest that clients presenting with greater severity of substance use were more likely to engage and complete treatment. Cosden and colleagues (2006) attributed this to the higher level of dysfunction associated with increased severity of dependence resulting in a greater desire for change and willingness to engage in counselling to achieve this. Again, the authors did not report the effects of motivation on reductions or change with specific substances, nor did they differentiate internal and external motivation, so the results of the study are limited to a broader conceptualisation of these constructs.

Similarly, Carpenter, Miele & Hasin (2002) found that presenting alcohol and cocaine use were predictive of motivation to change, with greater severity of substance use related to increased motivation at treatment entry. The study examined 150 people attending drug and alcohol treatment for problematic alcohol, cocaine or heroin use, with results supporting the differential substance use patterns in motivation especially at presentation for treatment. They found that more severe alcohol use at treatment initiation was related with higher motivation for treatment although motivation for change did not have a significant effect on alcohol or cocaine use. Higher motivation for change was associated with greater utilisation of treatment in cocaine users but had no effect for those with an alcohol dependence. Statistical

issues prevented similar comparisons to be made between heroin users and motivation. Carpenter, Miele and Hasin concluded that relationships between substance use and motivation change over time, and the course of treatment as motivation to change at treatment entry was not found to have a mediating effect on whether clients engaged in the treatment process.

While these studies highlight the importance of considering substance use type in order to better understand motivation in a drug and alcohol population, they did not differentiate between internal and external motivation, and sourced participants from in-patient treatment facilities, overlooking community-based treatment implementation. The current study aims to increase our understanding of the role and impact of internal and external motivation in a community drug and alcohol sample.

Ideally, once the client chooses to actively engage in the therapy process, their perception of substance use has the potential to change as they recognise the benefits of abstinence or reduced use. This is, of course, in conjunction with skilled intervention by the clinician in establishing client commitment for change, and exploring the specific advantages and risks associated with continued substance use. This process is then thought to perpetuate the maintenance of positive behavioural change and development of internal motivation seemingly independent of the external pressures. Motivation clearly has significantly positive effects on a number of domains important for effective drug and alcohol treatment including substance use reductions, treatment retention, criminality and psychosocial functioning. It is therefore important to endeavour to understand the mechanisms that facilitate and enhance motivation to ensure maximum therapeutic benefits for drug and alcohol clients.

Understanding motivation in drug and alcohol populations: The Stages of Change Model

The Stages of Change Model is widely utilised throughout the drug and alcohol field to explain the complex process of change in addiction (Marsh & Dale, 2006).

The Stages of Change Model was developed by Prochaska and DiClemente (1986) and posits a transitional, cyclical model of motivation and readiness to change. The model incorporates five progressive stages and accounts for the cognitive preparedness required before behavioural change occurs. The first posited stage is *Precontemplation* where the individual has yet to identify their use as problematic and is resistant to change. Next is the *Contemplation* stage; characterised by recognition of substance use as causing difficulty throughout the client's life and the identification of substance use as problematic. This is followed by the *Preparation* stage, where the individual formalises a decision to change, and begins planning what needs to happen in order to successfully reduce or cease their substance use. The fourth stage, *Action*, is where steps are actively taken to achieve substance use goals. Once change has been achieved, the individual enters the *Maintenance* stage, where efforts are made to maintain the positive changes and prevent relapse.

Prochaska and DiClemente (1986) incorporate relapse and lapses with substance use into their model, and propose that substance-using clients can cycle through these multiple stages several times before achieving sustained substance use reduction or abstinence.

The rate and efficacy in which individuals progress through the Stages of Change depends on a number of factors, including premorbid motivation, client characteristics and, importantly, the quality of the relationship established with their clinician (Marsh & Dale, 2006). If a strong rapport is established with the client, it follows that clients will feel more comfortable discussing concerns and

barriers to achieving their substance use goals as they attempt to implement different and more adaptive strategies.

The impact of coercion on motivation for treatment

It is well established that coercion has an influence on treatment seeking, and a high proportion of clients attending drug and alcohol services may not have done so without external pressure from friends, family, courts, to name a few (Marlowe, et al., 2001). Prendergast, Greenwell, Farabee and Hser (2009) proposed that the success of treatment is dependent on perceived coercion, how much choice and autonomy the individual feels they have in deciding to attend treatment, internal motivation, and whether the individual is committed and willing to engage in the process of change.

Ambivalence is intimately linked with both motivation and coercion and is an integral component of drug and alcohol treatment that needs to be addressed in order to consolidate a client's commitment for change (Sullivan et al. 2008). Hovarth and Luborsky (1993) suggest that coercion is synonymous with treatment resistance and ambivalence, and that this translates into different needs and considerations for coerced clients in the design and implementation of treatment. Clients will often enter treatment with some ambivalence about quitting or cutting down on their substance abuse (readiness to change), and making a commitment to treatment. It is a difficult and confronting task to identify problematic behaviour, unlearn maladaptive coping strategies and develop new skills to manage stress, regulate emotion, numb emotional pain or other reasons initiating the development and maintenance of substance abuse or dependence.

A rationale in favour of coercion in substance use treatment is thought to be via motivating the client to comply with treatment. This is achieved through the identification and realisation of consequential yet unfavourable alternatives including

health, familial and legal repercussions of not making behavioural change. This can reinforce the role and benefits of entering into treatment (Sullivan et al. 2008), and some research has found advantages of extrinsic pressure in initiating treatment engagement, improving retention rates and enhancing treatment outcomes in clients with drug and alcohol problems (Klag, O’Callaghan & Creed, 2005; Seddon, 2007). It has been reported that treatment efficacy for clients who are pressured to attend treatment is best when the consequences (whether through the avoidance of negative consequences or increased likelihood of positive outcomes) are contingent on treatment compliance in addition to attendance and treatment engagement (Sullivan et al. 2008).

Klag, O’Callaghan and Creed (2005) suggest that the interaction between coercion and motivation is explained by a motivational crisis, caused when individuals are coerced into treatment. This dissonance is thought to facilitate a perceptual shift about the need for change, ultimately leading to internal resolve to enact positive change.

Predergast et al. (2009) recruited over 7000 clients participating in a court diversion scheme to explore the influence of coercion and motivation on treatment completion and arrest rates. All participants were legally coerced. Results indicated that the willingness of the individual to engage with the therapist and actively participate in the therapeutic process was somewhat independent of external motivation, and rather was related to the level of autonomy and control over action that the individual perceived. This means that the level of motivation for treatment was directly related to the level of perceived coercion in this study.

Marshall and Hser (2002) conducted interviews on 565 participants attending a variety of substance use services including out-patient counselling, detoxification, methadone maintenance programs, residential and day treatments. Participants were

categorised as those who were legally mandated, those with legal contact but no directive for treatment and those with no legal involvement. They found that motivation varied between groups, with mandated clients reporting significantly lower motivation, desire for help, problem identification and readiness for treatment.

The study also found that mandated clients reported less satisfaction with their treatment and had lower expectations and confidence in treatment than the other coerced and non-coerced participants. This has interesting implications for the treatment of mandated clients and the understanding of motivation and therapeutic alliance with this population; two factors widely considered fundamental for successful treatment outcomes. Specifically, these results suggest that legally mandated clients are particularly resistant to treatment with little confidence in the helpfulness of counselling, emphasising the need for clinicians to address these perceptions before effective intervention can begin. Similarly, the differential motivational characteristics found in this study between mandated and otherwise coerced out-patient clients, highlights the need to consider the uniqueness of these variables in more detail. This is especially important for community-based clients who have been largely overlooked, with existing research tending to focus on residential and incarcerated populations.

Importantly, Marshall and Hser (2002) also found significant differences between groups in terms of their substance use type, with, for example, legally mandated clients being more likely to use cocaine. This again emphasises the importance of considering substance type when investigating coercion in addiction populations and the current study will seek to do this.

Despite research commonly suggesting that coerced clients are less motivated and more resistant to treatment, Gregoire and Burke (2004) studied the effects of motivation and coercion on alcohol, cannabis, cocaine and opiate use in 295 substance

using clients in an out-patient setting. They found that, overall, coerced clients were more motivated to change than voluntary clients, and that clients legally mandated into treatment were three times more likely to be in the action phase of the stage of change (Prochaska & DiClemente, 1986) rather than the contemplative stage. Coerced clients were also 2.8 times more likely to be abstinent from drugs and alcohol than non-coerced clients at treatment entry. Unfortunately, like the majority of research in this area, the study did not report on independent drug profiles.

Legal coercion was found to be related to higher readiness to change even when controlling for problem severity, lifetime treatment history, prior treatment and gender. Gregoire and Burke hypothesised that high readiness for change in their coerced population may be attributed to a self-selection bias, with only those with moderate internal motivation upon presentation choosing to attend and engage in treatment. However, the effects of external motivation were not considered and it is possible that the opportunistic nature of coerced drug treatment combined with high extrinsic motivation was responsible for client engagement in treatment and facilitating change in this population.

On the contrary, Kelly, Finney and Moos (2005) found that mandated clients were less motivated than non-mandated clients in their study of the long term effects of coercion on treatment outcomes at 1 and five year follow up (n=2095). The researchers explained this in relation to the severity of dependence, with mandated clients demonstrating less severe substance use, including cocaine, methamphetamine, heroin, tranquillisers and inhalants, and therefore requiring less motivation to enact positive change. Interesting differences in presenting characteristics of coerced and non-coerced clients were found, with coerced clients reporting fewer negative consequences associated with their substance use, being less likely to meet diagnostic criteria for dependence or perceive themselves as addicts, and reporting fewer episodes of prior

drug and alcohol treatment and arrests. These results raise significant clinical implications in working with coerced clients, specifically in regards to their presenting issues and subsequent treatment needs, and in better understanding similarities and differences in their presentation to facilitate successful intervention. This study included only male drug and alcohol clients, all of whom had been through detoxification from substances prior to participation in the study, which potentially undermines the complexity of motivation and treatment engagement in clients presenting for community treatment in real world settings. It is also noteworthy that the study focused on mandated status and not perception of coercion, and failed to report on the effects of individual substances, which may affect the utility of their conclusions and their ability to generalise to real world substance using clients.

Kelly, Finney and Moos (2005) also found that mandated clients were significantly more likely to have maintained abstinence after 12 months and they presented with less psychological distress and lower overall motivation for change, which suggests that problem identification and intrinsic motivation may not be necessary in order for positive change to occur in drug and alcohol clients. No significant difference was found between coerced and non-coerced clients in their satisfaction with treatment, although coerced clients were less motivated initially but reported similar levels of coping and self-efficacy. Despite the likelihood that extrinsic pressures motivating coerced clients to seek and comply with treatment had dissipated or been removed entirely, equivalent results were obtained for both coerced and non-coerced groups at longer term follow up five years after treatment. This raises important implications not only for the advantageous role of motivation in treatment for mandated clients and the potential for their initial motivation to engage in treatment to outlast the motivational source and also the possibility that perhaps extrinsic motivation may be internalised once perceptual changes occur.

Formalised coercion can be a significant factor in motivating clients to attend treatment and importantly to stay in treatment once engaged (Peters & Murrin, 1998; Trone & Young, 1996). For example, a study by Simpson, Joe, Rowan-Szal and Greener (1995) investigated the relationship between readiness to change and coercion in clients discharged from methadone services after finding that retention in the program for one year was highly predictive of positive post discharge outcomes in this sample. Interviews were completed on 435 individuals, and results showed that higher motivation for treatment as well as lower intravenous substance use were associated in twofold increases in positive outcomes at follow up, completed one year after treatment cessation. These factors were found to relate to greater reductions in substance use and criminal behaviour. Importantly, client motivation at treatment entry was found to relate to better treatment retention. These results indicate the importance of understanding client's presenting characteristics, especially motivation, as this was found to be the best predictor of positive substance use outcomes and in the maintenance of therapeutic gains longer term.

While it is clear that motivation has an important role in facilitating successful therapeutic outcomes, there are other factors involved in the therapeutic process that impact upon the client's experience of therapy and ultimately lead to optimal therapeutic outcomes. Therapeutic alliance is one factor consistently found to have a significant influence effectiveness of drug and alcohol interventions.

Therapeutic Alliance

Defining therapeutic alliance

Therapeutic alliance, or the safe, compassionate, genuine, empathic relationship between therapist and client who are working collaboratively toward therapeutic goals, has been repeatedly shown to be predictive of effective therapeutic

intervention, particularly in the first few sessions (Norcross, 2010). Ackerman and Hilsenroth (2003) propose a number of clinician skills or qualities that help facilitate the therapeutic alliance. These include empathic engagement, clear communication, and the therapist's ability to relate to the client and project themselves as trustworthy, flexible, collaborative and competent.

The role and significance of therapeutic alliance in psychological treatments.

Norcross (2010) suggests that the therapeutic relationship is a central mechanism for change and that without a good alliance with the client, they will not, and perhaps cannot, effectively enact change. MacNeil, Hasty, Evans, Redlich and Berk (2009) report that the therapeutic alliance is regarded as a central tenet to a number of therapy modalities including psychotherapy, cognitive, narrative, solution-focused therapies and motivational interviewing (progressing clients through the stages of change), all of which are commonly implemented in substance abuse treatment. However, Martine, Gaske and Davis (2000) indicate that a good therapeutic relationship can in itself be a therapeutic tool that facilitates change. They suggest that given therapeutic alliance consistently predicts positive treatment outcomes despite the significant differences in theoretical underpinnings and conceptualisations of specific therapies, that this is evidence that alliance alone has therapeutic benefits. At least some of the change reported during treatment is undoubtedly related to therapeutic alliance, independent of treatment type.

MacNeil et al. (2009) suggest that establishing and maintaining a good therapeutic alliance can be particularly difficult when working with certain clinical populations. Qualities commonly found in clients presenting for drug and alcohol treatment include personality disorders and histories of abuse, are

associated with greater levels of distrust, poorer emotional regulation and difficulty relating socially and interpersonally with others. This clearly makes establishing and maintaining a good therapeutic alliance with some drug and alcohol clients particularly difficult.

The impact of therapeutic alliance on treatment engagement and outcomes

There is a general consensus in the literature that a strong positive relationship between therapist and client (therapeutic alliance) is associated with better treatment outcomes, including reduced substance use and longer treatment retention (Connors et al. 2000; Meier et al. 2005; Meier, Barrowclough & Donmall, 2005). The difficulty in establishing therapeutic alliance within drug and alcohol settings relates also to the intoxication effects of substances including impulsivity and disconnection from relationships, often making engagement difficult (McBride et. al. 1994). Similarly, the high rate of coercion in substance using clients further complicates this task, with clients not necessarily motivated to make change, engage in the therapy or establish an alliance with their clinician.

Research has often focused on the effects of alliance in the treatment of clinical symptomology and psychological disorders. Barber et al. (2000) and Klein et al (2003) found that higher alliance predicted more positive longer term outcomes for depression when accounting for confounding demographic variables such as personality disorders and severity of depression. Klein et al. (2003) examined the effects of alliance on treatment outcomes for 367 chronically depressed patients. They found that therapeutic alliance early in the therapy predicted significant improvements in symptoms of depression when treated with either cognitive behavioural therapy or pharmacotherapy. Similarly, positive associations have been found between alliance and treatment outcomes for bipolar disorder; with less resistance to medication and

lower reported clinical symptoms at six month follow up (Strauss & Johnson, 2006), lower rates of hospitalisation (Fakhoury, White & Priebe, 2007) and improved mood regulation in posttraumatic stress symptoms (Cloitre, Stovall-McClough, Miranda & Chemtob, 2004).

Therapeutic alliance and the benefits associated with a strong, positive relationship between client and counsellor, has significant relevance to the addiction and substance use field, with mounting evidence illustrating the deleterious emotional, psychological, interpersonal, social, occupational and daily functioning of individuals engaged in abuse and dependence of alcohol and other drugs (Marsh & Dale, 2006).

The therapeutic alliance is one of the most consistent predictors of treatment outcome and retention in drug and alcohol treatment (Meier & Donmall, 2006). Two meta analyses have found moderate effect sizes between the therapeutic alliance and positive treatment outcomes for substance abusing populations. Hovarth and Symonds (1991) found a mean effect size of 0.26 between the subjective quality of alliance and substance use outcomes, and Martin, Garske and Davis (2000) reported a moderate relationship between therapeutic alliance and treatment outcome in substance using populations with an effect size of 0.22. Interestingly, client ratings of alliance were found to be more consistent than therapist ratings over time, suggesting that clients view this relationship as stable across therapy. This has important clinical implications as it highlights the significance of supportive, warm and therapeutic engagement with substance using clients from initial contact.

Comparatively, therapists have been shown to view the alliance as transient, which may result in less effective engagement with the client initially due to the belief that this relationship can be developed over time (Martin, Garske & Davie,

2000). Given the often short window of therapeutic opportunity in addiction treatment, due mainly to poorer retention, this has potentially negative implications as there may not be the time or opportunity to rectify relational mistakes as the clinician expects.

Myers, Pasche and Adam (2010) explored the role of therapeutic alliance in treatment completion among a sample of 434 South African drug and alcohol clients. Their participants were sourced from a range of addiction treatment contexts including out-patient, residential, hospital based and detoxification services. Results showed that client ratings of therapeutic alliance were related to treatment completion, with significantly higher completion rates for those clients who rated better alliance with their counsellor. Similarly, perceptions of treatment, which are likely to be related at least in part to the quality of the counsellor/client relationship, was also positively related to significantly better treatment completion. They propose, as has previously been suggested by Marsden et. al. (2000), that results showing a significant association between motivation and treatment completion in bivariate but not multivariate analyses, is indicative of an indirect effect of motivation on treatment completion facilitated in some way by the therapeutic alliance. Interestingly, the study assessed substance use type, finding considerable differences in treatment completion among users of different substances. For example, substantially higher treatment drop out in cannabis users were reported than for those using cocaine. Although these results were not explored in depth, and were undermined by incorporating all substance use data and not considering a poly-substance bias, these results suggest clinically significant differences in the relationship between users of particular illicit substances and highlights the need to examine this relationship further. The current study aims to understand the differential effects of substance use type on alliance, as well as motivation and coercion.

Importantly, the client sample in the Myers, Pasche and Adam (2010) study was sourced from a disadvantaged area in South Africa and thus may not be applicable to Western cultures due to the difference in demographic, societal and cultural norms. Nonetheless, it is clear from this research that therapeutic alliance has a significant influence on treatment completion, and that the relationship between motivation and therapeutic alliance needs to be considered in more detail due to potential interactive effects affecting drug and alcohol clients.

In regards to substance use outcomes, Simpson, Rowan-Szal, and Greener (1995) examined the role of therapeutic alliance in client treatment progress incorporating a number of measures, including substance use at 3 months in out-patient addiction counselling clients. They found that client's positive perceptions of therapeutic interactions in counselling related to significant improvements in their drug and alcohol use. Specifically, they found significant reductions in cocaine, alcohol, heroin and amphetamines, with the average number of intravenous episodes decreasing from 108 to 9.5 per month. Similarly, the percentage of clients who reported using illicit substances in the previous month more than halved from 94% to 41% and these improvements were substantiated by urinalysis testing. These results indicated that therapeutic alliance plays a significant role in the effectiveness of substance use treatment and again highlights the need to further our understanding of alliance in optimising treatment in substance using clients.

Meier, Barrowclough and Donmall (2005) critically reviewed the literature on the role of the therapeutic alliance in the treatment of drug and alcohol clients. They found consistent, modest relationships between measures of alliance with treatment readiness, motivation and positive past experience in treatment. The review also found that therapeutic alliance early in the client/counsellor relationship was predictive of retention and treatment engagement overall, although improvement in substance use

outcomes were less consistently supported. This indicates that a strong therapeutic alliance in a cohort of people difficult to engage can have significantly positive effects on a number of aspects of treatment. The study also investigated client determinants of positive therapeutic relationships, finding that early client-rated therapeutic alliance is a relatively consistent predictor of retention in treatment, with higher rated alliance associated with longer time in treatment.

Client demographic characteristics, including age, gender, employment, relationship status or race have not consistently been found to significantly impact upon client perceptions of therapeutic alliance (Meier, Barrowclough & Donmall, 2005). However, there is some research suggesting that gender may play a role in the development of therapeutic alliance in some samples. For example, Connors et al. (2000) found a relationship between gender and alliance in their study of 1180 alcohol dependent clients in outpatient and aftercare substance use settings. The results of this study indicated that therapist experience and client gender significantly predicted clinician rated alliance, with more experienced clinicians rating lower therapeutic alliance overall and higher alliance with female clients compared with males. This may or may not be accounted for by differences in communication styles, openness and emotional expression between genders.

Conversely, Meier, Donmall, Barrowclough, McElduff and Heller (2005) assessed perceptions of alliance for 187 clients commencing a residential rehabilitation program. Measures were completed at intake and each week for the first three weeks of treatment. They found that clients reported better therapeutic engagement with male therapists compared to females, ex-users and experienced counsellors. This highlights conflicting preferences in gender and subsequent ratings of therapeutic alliance between therapists and clients. Perhaps a greater understanding of components of alliance, as explored in the current study, will shed some light on the explanations for this

difference.

Regardless, this body of research highlights the significance of therapeutic alliance in facilitating optimal substance use treatment outcomes. Marsh and Dale (2006) indicate the importance of a strong therapeutic alliance in clinical work with drug and alcohol clients, suggesting it is paramount not only to achieve an environment conducive to therapy, but to elicit change in substance use behaviours. Hence we hypothesise that clients with higher therapeutic alliance will have significantly better substance use outcomes.

The impact of coercion on therapeutic alliance

There are few studies exploring therapeutic alliance factors in coerced populations, despite the obvious potential for links between higher coercion and lower alliance, particularly early in therapy. The available literature, albeit published almost 20 years ago, suggests that the most common features of coerced clients, hostility and negative attitude, (Kokotovic & Tracey, 1990) results in difficulty engaging effectively in a therapeutic relationship with a counsellor.

Barrowclough, Meier, Beardmore and Emsley (2010) conducted a randomised controlled trial of clients with comorbid substance use issues and psychosis to examine predictors of the therapeutic alliance within this sample. They found that poor insight and negative attitudes to treatment were related to significantly poorer therapeutic alliance as measured by the Working Alliance Inventory. Other predictors of alliance included living environment, depression and attitude to medication, while substance use and symptom severity were not significantly associated with the therapeutic alliance in this study. The effects of coercion were not examined, although the issue of external pressure to attend treatment is of particular interest in co-morbid clients. People with co-morbid mental health and substance use problems

frequently present to drug and alcohol services (Marsh & Dale, 2006), and due to the often complex presentation and compounding stressors of a mental health co-morbidities, difficulties with engagement and retention in treatment are common. These results reiterate the importance of establishing and developing a strong relationship with clients in the drug and alcohol treatment context. Better alliance is generally related to better treatment outcomes overall, yet the drug and alcohol population commonly exhibit the qualities that are associated with lower ratings of alliance such as poor insight and treatment resistance (Klag, O'Callaghan & Creed, 2005). We therefore hypothesised that coerced clients will report significantly lower therapeutic alliance than non-coerced clients.

The relationship between motivation and therapeutic alliance

Perhaps the most significant factor thought to affect therapeutic alliance is motivation. Joe, Simpson and Broome (1998) completed a study of 2265 clients who were categorised into long term residential, out-patient drug free and out-patient methadone client groups. They found that motivation at the commencement of therapy was a sound predictor of therapeutic alliance for drug and alcohol clients across the three treatment conditions, with higher motivation associated with better reported alliance with their counsellor. The researchers suggest that the stability of this relationship, despite variable retention rates across the treatment modalities, indicates that motivation may have a compensatory role for less effective treatments; highlighting the importance of motivational enhancement strategies.

In addition to the predictive relationship between motivation and alliance, Joe, Simpson and Broome found that those clients with higher measures of motivation and alliance demonstrated better retention in treatment, and motivation was found to be a stronger predictor than legal mandate, previous treatment,

employment and legal history. This underscores the importance of considering both therapeutic alliance and motivation when working with addiction populations.

However, internal and external motivation were not considered independently, nor were components of therapeutic alliance adequately accounted for in this study, it is clear that there is a positive relationship between alliance and motivation in this study when regarding these concepts in a broader sense. The current study will add to the literature by exploring facets of motivation and therapeutic alliance in more detail.

Meier, Donmall, McElduff, Barrowclough and Heller (2006) investigated predictors of early therapeutic alliance in a sample of drug and alcohol clients attending residential rehabilitation programs (n=187). Their study found that motivation, social support, secure attachment and coping ability were all related with higher measures of therapeutic alliance. The authors suggested that those who are able to establish and maintain successful relationships in their personal lives, and had developed a range of effective coping strategies, were more able to engage and build an alliance with their therapist. Similarly, external motivation, readiness for change and desire for help were all predictive of better alliance with their therapist. This is perhaps due to the perception and openness of the clients to a positive experience in therapy assisting the facilitation of mutual understanding and agreed therapeutic goals. Although coercion was not examined in this study, it is likely that residential clients may be particularly susceptible to perceptions of coercion, given the frequency of court directed engagement and the prevalence of legal involvement in residential attendees. The impact of perceived coercion in this context would be important to explore.

Ilgen, McKellar, Moos and Finney (2006) investigated the role of the therapeutic alliance on the relationship between motivation and treatment outcomes in a sample of 753 out-patient, alcohol dependent clients. The study reported that low motivation in their alcohol sample may be countered by a strong, positive therapeutic

relationship. Higher alcohol use was found in clients who reported low motivation but this association was substantially reduced if the client had developed a strong relationship with their clinician. These findings have significant implications for improving the experience of therapy and the protective effects of a good relationship despite low motivation from the individual to reduce substance use. This might be particularly relevant for coerced populations who typically present with lower motivation (intrinsic) at treatment entry.

It is evident from the aforementioned research that motivation and therapeutic alliance can positively influence multiple domains in drug and alcohol treatment. Interestingly though, minimal research is available on the dynamics and interaction of these two variables in an addiction context. The current study will explore this relationship.

The relationship between coercion, motivation and therapeutic alliance

The complex interaction between motivation, alliance and coercion underlies many, if not all interactions with drug and alcohol clients. However, there is a notable lack of research investigating both therapeutic alliance and treatment motivation in coerced populations, despite the substantial amount of research suggesting the significance of these variables individually in the engagement and treatment of coerced substance using clients (Klag, O'Callaghan & Creed, 2005).

In one of the few available studies of its kind, Rosen et al. (2004) explored the relationship between motivation and engagement in a coerced, substance using population. Their sample consisted of 220 incarcerated males referred to treatment by the Parole Board. Within this sample, compliance with the directions of parole was the most commonly reported source of extrinsic motivation, while problem recognition and desire for help were the highest reported intrinsic motivations for

treatment. Rosen and colleagues found that higher internal motivation was associated with higher engagement, and greater engagement was related to stronger confidence in treatment. Additionally, those clients who identified the problematic nature of their substance use were more committed to their treatment, and higher internal motivation was associated with a higher level of cognitive engagement in the treatment process. Interestingly, no association was found between commitment to treatment and desire for help, which suggests that coerced individuals have the potential to be as motivated and engaged in the process of change regardless of their initial perceptions of their need for help with their substance use. The authors suggest that the association between higher cognitive engagement and intrinsic motivation indicates that clients with low intrinsic motivation are more likely to find engaging in the therapeutic and change process more challenging. Rosen et al. (2004) also reported that older participants were significantly more confident in treatment, as were poly-substance users. However, the client's perceptions of motivation and coercion were not examined or taken into account, despite previous research indicating these are important considerations when working with clinical samples. Given the higher external motivation in coerced clients due to pressures from external sources, we hypothesise that clients with higher external motivation will report significantly lower therapeutic alliance than will those with lower external motivation.

In summary, for optimal and sustained substance use outcomes, clients would ideally present highly motivated with a willingness and ability to engage well with their therapist. In the reality of drug and alcohol treatment, particularly in community settings, this client is the exception. This is partly due to alcohol/other drug use serving a functional purpose for the individual, whether it is to achieve a sense of euphoria, cope with compounding and seemingly insurmountable life stressors, managing difficult thoughts and feelings, or complying with social and peer pressure. In this

context, substances can often be regarded by the individual as the lesser of two evils, which emphasises the struggle that clients face when decide to change their substance use.

Research suggests that motivation fluctuates over time and that treatment motivation decreases over time (Rosen et al. 2004). This may be especially true for coerced or legally mandated clients for whom their perceived pressure to attend and engage therapy is dependent, in part, on transient influences. It is interesting to consider, then, whether a strong positive engagement in a therapeutic process can impact upon the client's treatment outcomes in relation to retention in treatment, reduction or abstinence in drug and alcohol use and through the development of alternative, more adaptive coping strategies to manage difficult life stressors. However no research exists that adequately explores these relationships.

Synthesis

Past conceptualisations of coercion have been inadequate, with research incorporating only those mandated into treatment. Similarly, there is a shortage of literature examining the relationship between substance use and coercion, both of which will be addressed in the current study. While the benefits of motivation and therapeutic alliance have been well established, the majority of research focuses on these as separate entities, undermining the complex interactions that occur in the therapeutic process. Coercion, motivation and therapeutic alliance are regarded as fundamental components in therapy and have a particularly important role in addiction populations. The relevance and significance of which will be addressed in this study.

The Current study

The current study aims to explore the presenting characteristics of clients attending a community drug and alcohol counselling service in relation to coercion, motivation, therapeutic alliance and substance use, as well as the effect that these variables have on treatment outcomes 15 weeks later. In doing so, we will attempt to address a number of shortcomings in the addiction literature.

Firstly, we aim to overcome a fundamental flaw in previous operational definitions of coercion, which identified coerced clients as those who were mandated to treatment by a referring agency such as the legal system. We will thus examine client perceptions of coercion on substance use. Secondly, we will investigate the dynamic and interaction of facets of therapeutic alliance (bond, partnership, confidence in treatment, initiative and openness) and motivation (internal and external motivation, treatment confidence and help seeking) on one another and on substance use outcomes, and the interactive relationship between alliance and motivation.

Adding to the novelty of the current research, we will be exploring the relationship between these variables in a sample of real world community drug and alcohol clients. The vast majority of research in addiction, especially relating to coercion, utilises in-patient or residential client samples which may not be representative of the substantial proportion of clients who attend community substance use treatment services. We will also investigate the influence of motivation, therapeutic alliance and coercion on specific drug types; alcohol, tobacco, cannabis, heroin, opiates including methadone, methamphetamine, tranquillisers, barbiturates, hallucinogens, and inhalants.

Research Questions and Hypotheses

1) To explore presenting characteristics of clients attending a publicly funded Drug

and Alcohol Counselling Service in terms of coercion, motivation and therapeutic alliance. It is hypothesised that:

- (a) Coerced clients will have significantly higher external motivation than non-coerced clients;
- (b) Coerced clients will report significantly lower therapeutic alliance than non-coerced clients;
- (c) Higher external motivation will be associated with lower therapeutic alliance at entry to treatment.

2) To explore the impact of coercion, motivation and therapeutic alliance in substance use outcomes. It is hypothesised that:

- (d) External motivation will have a significant impact on substance use outcomes;
- (e) Clients with higher therapeutic alliance will report significantly better substance use outcomes.
- f) Coerced clients will report significantly poorer substance use outcomes than non-coerced clients.

MANUSCRIPT**TO ENFORCE OR ENGAGE: THE RELATIONSHIP BETWEEN
COERCION, TREATMENT MOTIVATION AND THERAPEUTIC
ALLIANCE WITHIN COMMUNITY BASED DRUG AND ALCOHOL
CLIENTS.**

This manuscript has been submitted to *Addictive Behaviors* (see submission confirmation in Appendix P). The manuscript has been written in accordance with the *Instructions to Authors* document supplied by the journal editors, which appears in Appendix Q.

To enforce or engage: The relationship between coercion, treatment motivation and therapeutic alliance within community-based drug and alcohol clients.

Samantha Wolfe^{a,b}, Frances Kay-Lambkin^{c,d}, Jenny Bowman^a & Steven Childs^b

^a School of Psychology, University of Newcastle, Newcastle, Australia.

^b Central Coast Drug and Alcohol Clinical Service, Northern Sydney Central Coast Area Health Service, Australia.

^c National Drug and Alcohol Research Centre, University of New South Wales, New South Wales, Australia.

^d Centre for Brain and Mental Health Research (CBMHR), Faculty of Health, University of Newcastle, Callaghan, NSW 2308, Australia.

Corresponding author: Dr Frances Kay-Lambkin

PH: +61 2 4033 5690

Fax: +61 2 4033 5692

Email: f.kaylambkin@unsw.edu.au

Address: National Drug and Alcohol Research Centre, 22-32 King Street, Randwick, 2052 AUSTRALIA

Abstract

Three fundamental clinical issues are consistently associated with treatment engagement and outcomes in substance using populations; *coercion*, *motivation* and *therapeutic alliance*. It is accepted that these factors play an integral role in the success of substance use treatment and particularly that higher motivation and therapeutic alliance are advantageous to treatment outcomes. The impact of coercion on engagement and treatment outcome, on the other hand, is less clear, and the relationship between these three issues has not been adequately explored. The current study aimed to address this gap, by examining the presenting characteristics of clients attending a community drug and alcohol counselling service in relation to coercion, motivation, therapeutic alliance and substance use, as well as the effect that these variables had on treatment outcomes 15 weeks later. A total of 77 clients recruited from the Central Coast Drug and Alcohol Service participated in the study, completing a phone assessment upon treatment entry and 15 weeks post-baseline. Results indicated that facets of motivation and therapeutic alliance played a significant role in client's substance use upon presentation for treatment, although coercion did not. Coercion was not associated with substance use outcomes at 15 week follow up. However, due to a relatively small sample completing post-baseline assessments (n=33), further research is needed to examine the predictive effects of these variables in community drug and alcohol clients.

Keywords

Coercion, substance use, treatment motivation, therapeutic alliance

Introduction

Alcohol and illicit drug (AOD) use is a significant global public health issue. In 2007, nine out of ten Australians over the age of 14 had consumed alcohol and two of five had used illicit drugs (AIHW, 2007). There is considerable and mounting evidence highlighting the deleterious impact that substance use, abuse and dependence has on physical, emotional, social and psychological functioning (Marsh & Dale, 2006). The prevalence combined with the substantial harm associated with AOD use highlights the need for effective and targeted intervention for AOD use and its associated problems.

AOD clients are heterogeneous, with a vast array of factors contributing to the complexity of addiction treatment. These include variable social supports, education, referral source, mental health co-morbidity, primary drug of choice, pattern of use and personal characteristics of the individual (Marsh & Dale, 2006). DiClemente, Nidecker and Bellack (2008) suggest that clients with AOD use problems have more severe cognitive impairment, poorer insight and decision making skills, as well as diminished ability to identify the need for treatment. These behaviours make effective treatment engagement, establishing and working toward treatment goals and facilitating positive and sustainable behaviour change in counselling, challenging.

Three fundamental clinical issues have been consistently associated with treatment engagement and outcomes for psychopathology, especially in AOD using populations. These factors are: *coercion*, *motivation* and *therapeutic alliance*. Given the link between criminal behaviour and AOD use (Wild, Roberts & Cooper, 2002), poor and inconsistent motivation (Klag, O'Callaghan & Creed, 2005) and a general distrust of perceived authority (Shearer & Ogan, 2002), better understanding of the significance and role of motivation, therapeutic alliance and coercion in AOD clients is required.

1.1 Coercion

Marshall and Hser (2002) suggest that as many as half of all referrals to community-based AOD treatment services have some involvement with the criminal justice system. A substantial proportion of clients presenting to addiction services are thus coerced, and seeking help due to external pressure from services, such as Probation and Parole¹, Child Protection agencies and the Criminal Justice System (Ondersma, Winhusen & Lewis, 2010). The high prevalence of coercion within AOD using populations is explained partly by the illicit nature of the substance use, the impulsivity associated with intoxication and the high incidence of abuse, neglect and other child protection concerns, which leads to negative consequences and engagement in health, welfare and legal services. (Ondersma, Winhusen & Lewis, 2010). Thus there is a need to understand more about the role and impact of coercion in treatment initiation and substance use outcomes in drug and alcohol clients.

Operational definitions of coercion in the existing literature have been inconsistent and undermine the complexity of this construct in addiction populations. Traditionally, coercion was exclusively defined by referral source, that is, those required to attend and/or who are referred by the legal system (Klag, O'Callaghan & Creed, 2005). This resulted in a focus of coercion research on clients referred by the legal system only and did not incorporate other, equally significant sources of coercion for drug and alcohol clients such as friends, family, other government agencies, employers etc.

¹ Probation and Parole services in Australia assist courts and Parole Boards to assess whether offenders are suitable for community-based orders, to enforce any conditions of the courts and Parole Boards, and to assist offenders to successfully complete such orders, including drug rehabilitation orders (QCS, 2010).

Klag, O'Callaghan and Creed (2005) highlight the important difference between formal and informal forms of coercion as different from legal coercion. They define informal coercion as the pressure exerted by familial and social supports, including extrinsic identification of problematic substance use, threats and negative interpersonal consequences associated with continued drug and alcohol use. Formal non-legal coercion is generated from sources removed from the person; specifically employers, health professionals, and government agencies, who may be providing welfare and other supports to the person. Formal legal coercion is that imposed by the court system through legal sanctions and directives. Furthermore, definitions of coercion based on referral source such as legal mandate, infers that non-mandated clients are seeking treatment of their own volition, which is often inaccurate (Sullivan et al. 2008).

The inconsistent definitions of coercion and substantially different characteristics of the participant groups examined in the available research on this issue, makes drawing conclusions regarding the impact of coercion on treatment engagement and outcomes difficult. Further, the majority of research in this area focuses on residential and in-patient treatment, and does not explore the complexities of community-based drug and alcohol treatment. It thus remains important to comprehensively understand coercion and other influences affecting treatment of clients attending out-patient, community-based drug and alcohol services, in order to maximise therapeutic benefits achieved in therapy. It is clear that assessing client's perception of coercion and accurately incorporating the vast array of formal and informal pressures that lead clients to therapy is necessary.

1.2 Motivation

Motivation is considered crucial to the therapeutic process. It is well established that motivated clients have significantly better treatment outcomes than those individuals who are not motivated to engage in therapy (Hiller, Knight, Leukefeld & Simpson, 2002; Longshore & Teruya, 2006). Motivation is an integral part of treatment initiation, help seeking behaviour, treatment retention, positive substance use outcomes and long term maintenance of therapeutic gains (Cahill et al. 2003). Melnick et al. (2001) suggest that clients who are effectively engaged in treatment have better session attendance, report more favourable perceptions of treatment, develop better therapeutic relationships with their therapist, report more confidence in the benefits of treatment and have better therapeutic outcomes than those who are less engaged. These studies highlight the benefits of motivation in AOD clients, which extend beyond treatment outcomes, positively influencing the client's experience of treatment. This has potentially significant clinical implications for re-engaging clients in drug treatment in future, if required.

Motivation is a multidimensional construct, which encompasses the internal desires and urges felt by a client, external pressures and goals that influence the client, perceptions about the risks and benefits of behaviours to oneself, and cognitive appraisals of the client's situation (Centre for Substance Abuse Treatment, 2009). In the context of AOD use, internal motivation encapsulates emotional, cognitive and physical internal factors; including distress, desire to enact change, discontentment with current circumstances and recognition of substance use as problematic (Hiller, Knight, Leukefeld & Simpson, 2002). Conversely, external motivation relates to that which is derived from external pressures, including consideration of the consequences of continued behaviour, such as loss of family, employment or income. Internal and external motivation are conceptually

linked, although high scores on one construct does not necessarily equate to low or high scores on the other (Farabee, Nelson & Spence, 1993; Farabee Predergast & Anglin, 1998). An individual may have high internal and external motivation or high internal but no external motivation. Motivation is considered to be a transient phenomenon that is experienced on a continuum with each individual having some degree of internal and external motivation (Klag, O'Callaghan & Creed, 2005).

1.3 The impact of coercion on motivation for treatment

It is generally accepted that coercion has an influence on treatment seeking, and a high proportion of clients attending AOD services may not have done so without external pressure from friends, family, courts, to name a few (Marlowe, et al., 2001). Predergast et al. (2009) proposed that the success of treatment is dependent on perceived coercion, how much choice and autonomy the individual feels they have in deciding to attend treatment, internal motivation, and whether the individual is committed and willing to engage in the process of change. Hovarth and Luborsky (1993) suggest that coercion is synonymous with treatment resistance and ambivalence, and that this translates into different needs and considerations for coerced clients in the design and implementation of treatment.

A rationale in favour of coercion in AOD use treatment is thought to be via motivating the client to comply with a treatment program. This is achieved through the identification and realization of consequential yet unfavourable alternatives including health, familial and legal repercussions of not making behavioural changes. This can reinforce the role and benefits of entering into treatment (Sullivan et al. 2008), and some research has found advantages of extrinsic pressure in initiating treatment engagement,

improving retention rates and enhancing treatment outcomes in clients with AOD use problems (Klag, O'Callaghan & Creed, 2005; Seddon, 2007).

Marshall and Hser (2002) conducted interviews on 565 participants attending a variety of AOD services including out-patient counselling, detoxification, methadone maintenance programs, residential and day treatments. Participants were categorized as those who were legally mandated, those with legal contact but no directive for treatment, and those with no legal involvement. They found that motivation varied between groups, with mandated clients reporting significantly lower motivation, desire for help, problem identification and readiness for treatment. The study also reported that mandated clients expressed less satisfaction with their treatment and had lower expectations and confidence in treatment than the other coerced and non-coerced participants. This has interesting implications for the treatment of mandated clients and the understanding of motivation and therapeutic alliance with this population; two factors widely considered fundamental for successful treatment outcomes. Specifically, these results suggest that legally mandated clients are particularly resistant to treatment, with little confidence in the helpfulness of counselling, emphasising the need for clinicians to address these perceptions before effective intervention can begin.

While it is clear that motivation has an important role in facilitating successful therapeutic outcomes, there are other factors involved in the therapeutic process that impact upon the client's experience of therapy and ultimately lead to optimal therapeutic outcomes. Therapeutic alliance is one factor consistently found to have a significant influence effectiveness of AOD interventions.

1.4 Therapeutic Alliance

Therapeutic alliance, or the safe, compassionate, genuine, empathic relationship between therapist and client who are working collaboratively toward therapeutic goals, has been repeatedly shown to be predictive of effective therapeutic intervention, particularly in the first few sessions (Norcross, 2010). Ackerman and Hilsenroth (2003) propose a number of clinician skills or qualities that help facilitate the therapeutic alliance. These include empathic engagement, clear communication, and the therapist's ability to relate to the client and project themselves as trustworthy, flexible, collaborative and competent. Norcross (2010) suggests that the therapeutic relationship is a central mechanism for change and that without a good alliance with the client, they will not, and perhaps cannot, effectively enact change.

MacNeil et al. (2009) explain that establishing and maintaining a good therapeutic alliance can be particularly difficult when working with certain clinical populations. Qualities commonly found in clients presenting for AOD treatment, such as personality disorders and histories of abuse, are associated with greater levels of distrust, poorer emotional regulation and difficulty relating socially and interpersonally with others. This may make establishing and maintaining a good therapeutic alliance with some AOD clients particularly challenging.

Therapeutic alliance is one of the most consistent predictors of treatment outcome and retention in AOD treatment (Meier et. al, 2006). Two meta analyses have found moderate effect sizes between the therapeutic alliance and positive treatment outcomes for substance abusing populations. Hovarth & Symonds (1991) demonstrated a mean effect size of 0.26 between the subjective quality of alliance and substance use

outcomes, and Martin, Garske & Davis (2000) reported a moderate relationship between therapeutic alliance and treatment outcome in substance using populations with an effect size of 0.22. Interestingly, client ratings of alliance were found to be more consistent than therapist ratings over time, suggesting that clients view this relationship as stable across therapy. This has important clinical implications, as it highlights the significance of supportive, warm and therapeutic engagement with AOD using clients from initial contact.

1.5 The impact of coercion on therapeutic alliance

There are few studies exploring therapeutic alliance factors in coerced populations, despite the obvious potential for links between higher coercion and lower alliance, particularly early in therapy. The available literature, albeit published almost 20 years ago, suggests that the most common features of coerced clients, hostility and negative attitude, (Tracey & Kokotovic, 1990) leads to difficulty engaging effectively in a therapeutic relationship with a counsellor.

1.6 The relationship between coercion, motivation and therapeutic alliance

The complex interaction between motivation, alliance and coercion underlies many, if not all interactions with drug and alcohol clients. However, there is a notable lack of research investigating both therapeutic alliance and treatment motivation collectively in coerced populations, despite the substantial body of research suggesting the significance of these variables individually in the engagement and treatment of coerced AOD using clients (Klag, O'Callaghan & Creed, 2005).

In one of the few available studies of its kind, Rosen et al. (2004) explored the relationship between motivation and engagement in a coerced, AOD using population.

Their sample consisted of 220 incarcerated males referred to treatment by the Parole Board. Within this sample, compliance with the directions of parole was the most commonly reported source of extrinsic motivation, while problem recognition and desire for help were the highest reported intrinsic motivations for treatment. Rosen and colleagues (2004) found that higher internal motivation was associated with higher engagement, and greater engagement was related to stronger confidence in treatment. Additionally, those clients who identified the problematic nature of their substance use were more committed to their treatment, and higher internal motivation was associated with a higher level of cognitive engagement in the treatment process. Interestingly, no association was found between commitment to treatment and desire for help, which suggests that coerced individuals have the potential to be as motivated and engaged in the process of change regardless of their initial perceptions of their need for help with their substance use.

1.7 The Current study

The current study aims to explore the presenting characteristics of clients attending a community-based AOD counseling service in relation to coercion, motivation, therapeutic alliance and AOD use, as well as the effect that these variables have on AOD outcomes 15 weeks later.

Firstly, we aim to take an inclusive approach to coercion in our sample, by examining motivation, therapeutic alliance and AOD use for clients who have been legally mandated into treatment and additionally who report feeling coerced into treatment by an external source, including family, friends, and other services. It is hypothesised that:

- (a) Coerced clients will report significantly higher external motivation and lower therapeutic alliance than non-coerced clients;

(b) Higher external motivation will be associated with lower therapeutic alliance at entry to treatment; and

(c) Coerced clients will report significantly poorer AOD use outcomes than will non-coerced clients.

Materials and Methods

2.1. Participants

A total of 166 new and ongoing clients, referred to the Central Coast DACS (NSW health, Australia) were invited to participate in the study. Of those referred, 56 declined participation, 24 were uncontactable and a further 9 did not return their consent documentation. Clients who did consent to participate in the study (n=77) were from the three teams within the service: Drug and Alcohol Counselling (n=44), Cannabis Clinic (n=19) and MERIT (n=13). The final sample was comprised of 48 males (mean age 38.30 years, S.D. 12.343) and 29 females (mean age 40.88 years, S.D. 13.691), and no exclusion criteria were applied.

2.2 Procedures

The procedural protocol developed for the current study is detailed elsewhere (Kay-Lambkin et. al, 2012).

2.2.1 Study Design and Setting

The study was conducted using current clients of the Central Coast Drug and Alcohol Clinical Service in New South Wales, Australia. The Drug and Alcohol Clinical Service (DACs) of the Central Coast forms part of the area's general health service for a population of 306,257.

DACS provides a range of clinical interventions to Central Coast residents with AOD use problems across the spectrum of early intervention, brief and extended treatment programs. Services include community counselling, detoxification (hospital-based and outreach), needle and syringe programs, pharmacotherapy services, a diversional program for young people with AOD use problems and legal issues (MERIT), a cannabis clinic and general practitioner medical management programs. A central intake service acts as the point of initial contact for access to DACS, with subsequent referrals made to relevant services as appropriate.

In 2006-7, 2,632 calls were received by the central intake service with 64% of these being referred to Central Coast DACS. Within the service, 3,329 treatment episodes were commenced, with 73% of clients completing treatment (NSCCHS, 2008). The majority of these (61%) were for males, aged 20-39 years (51%), with alcohol being the most common primary drug of concern (49%). On average, clients commencing treatment with the counselling service within DACS attended an average of 4.5 treatment sessions.

New and existing clients of the Central Coast DACS were referred to the research study by Clinicians from the Service, who provided contact details to the research team operating independently from the Service. The research team subsequently contacted the client for formal consent and completion of assessments. Clinicians were unaware whether or not their client was completing the study.

Following the provision of informed consent, clients completed a baseline interview via the telephone with the research team, for which they were reimbursed \$20 AUD. A second phone-based assessment occurred 15-weeks post-baseline, with \$20 AUD reimbursement again offered. Each assessment was approximately 30 minutes in duration, and this comprised the total participant involvement in the study.

Throughout the study period, clinicians of the Service were asked to provide treatment to their clients in the manner they felt was most clinically appropriate, and as per their usual clinical practice. There was no randomization of clients to treatment groups, nor any prescription provided by the research team as to what treatment of particular clients should constitute in this context. Consequently, the researchers had no control over the content of treatment sessions, or the duration of treatment provided.

Ethics approval was granted from the Northern Sydney Central Coast Human Research Ethics Committee (Approval Number: 08/HARBR/78/79) prior to the commencement of the study.

2.3 Measures

Clients provided demographical information about their family of origin, current living situation, education and academic qualifications, employment history, quality of their social and interpersonal relationships, income and attendance at AOD rehabilitation services at baseline. At this time, participants were also asked about the team from which they were referred (Counselling, Cannabis, MERIT), whether they had been mandated to attend treatment by other organisations (e.g. Probation and Parole, Child and Family Services), or whether (and by whom) they felt coerced or pressured to attend the current

treatment episode. Participants also completed a series of questionnaires at baseline and 15 week follow up including the Opiate Treatment Index (OTI) which explored past-month drug use across 11 AOD types, including frequency and quantity used; the Agnew Relationship Measure and the Treatment Motivation Questionnaire, which examine participant's self-reported perceptions of alliance with their therapist and motivation to attend treatment respectively.

2.3.1 Treatment Motivation Questionnaire

The Treatment Motivation Questionnaire (TMQ) is a 26-item self-report measure, examining four components of motivation: internal and external motivation, help seeking and confidence in treatment. A seven-point Likert scale is used to rate statements of motivation from "*not true at all*" to "*very true*". The TMQ has good internal consistency with Carey, Purnine, Maisto & Carey (1999) finding alpha co-efficients for the four subscales ranging between .70 and .98. Scores on the TMQ correlate highly with clinician ratings of overall motivation, disturbance, internal and external motivation (Ryan et al. 1995) which suggests good construct validity (Cahill et al. 2003).

2.3.2 Agnew Relationship Measure (ARM)

The ARM is a 28-item questionnaire measuring five dimensions of therapeutic alliance including bond, partnership, confidence in therapist, openness and client initiative (Agnew-Davis, Stiles, Hardy, Barkham & Shapiro, 1998). Seven statements are used to measure therapeutic alliance resulting in an overall score, which is achieved by adding the scores for each construct. A seven-item Likert scale is used to record responses ranging from "*strongly disagree*" to "*strongly agree*". Internal consistency for four of the five components, bond, partnership, openness and confidence in therapist were found to be

good with alpha coefficients ranging from .77 to .87 while client initiative was lower with and alpha coefficient of .55 (Agnew-Davis, Stiles, Hardy, Barkham & Shapiro, 1998).

2.3.3 Opiate Treatment Index (OTI)

The OTI is a standardized measure widely used in drug and alcohol samples to measure patterns of drug use, not limited to opiate substances (Darke, Ward, Hall, Heather & Wodak, 1991). Overall, the OTI consists of six outcome domains assessing different areas of functioning but for the purposes of the current study only the drug use subset of alcohol, cannabis, methamphetamines and tobacco use was used to minimise assessment burden and to focus on the most prevalent substances in our sample. The OTI asks participants about their last three occasions of substance use, the amount used and the time between each episode of use in relation to each drug type.

2.4 Statistical Analysis

2.4.1 Developing the coercion variable

The current study sought to overcome some of the past flaws in conceptualisations of coercion in considering the potentially differential impact of legal coercion, perceived coercion or the combination of these, on the relationship between AOD use, treatment motivation and therapeutic alliance.

At baseline, several definitions of coercion were generated:

- (a) MERIT vs. Counseling/Cannabis: Given that MERIT is a court diversion treatment service, all MERIT clients were legally mandated to attend treatment prior to criminal sentencing. Additional analyses were conducted using clients referred to the project from the MERIT team versus the other counselling teams within the Service (MERIT vs. Counselling/Cannabis) to determine whether legal

mandate has a significant impact on treatment compared with those who are not formally coerced.

- (b) No Coercion vs. Perceived vs. Legal Coercion: A second coercion variable was created that summarised the participants into three groups: no coercion at all, only self-reported perceived coercion, and legal coercion (Probation and Parole, MERIT).
- (c) Number of sources of coercion: This variable categorized participants into no coercion at all, coercion from one source only (perceived OR legal), or coercion from two sources (perceived AND legal).
- (d) Coerced vs. Not-coerced: This variable categorized participants into two groups; those reporting no coercion at all, and those reporting any coercion (perceived and/or legal).

With the exception of therapeutic alliance and treatment motivation (Hypothesis 1), the patterns of association between each of the coercion variables and the other variables of interest were identical. Thus, for simplicity, we report the results related to the fourth coercion variable (coerced vs. not-coerced) in the examination of the relationship between coercion, therapeutic alliance and treatment motivation. Results using all four coercion variables are reported for Hypothesis 1.

2.4.2 Demographics and other presenting characteristics

Exploratory data analysis was undertaken to describe the study sample at baseline. This included frequencies and descriptive statistics for the sociodemographic variables of age, gender, cultural background, and education, and baseline AOD use. Oneway Analysis of Variance (ANOVA) and Pearson correlations were used to explore the association

between these variables and coercion (coercion vs. not), therapeutic alliance (bond, partnership, client initiative, openness, and confidence in therapist), and treatment motivation (internal, external, help seeking, confidence in treatment).

2.4.3 Hypothesis 1 – At baseline, coerced clients will report significantly higher external motivation and lower therapeutic alliance than will non-coerced clients

Oneway ANOVA examined the association between coercion (MERIT vs. Counseling/Cannabis, No Coercion vs. Perceived vs. Legal, Number of sources of coercion, and coerced vs. not) and treatment motivation (internal, external, help seeking, confidence in treatment) and therapeutic alliance (bond, partnership, openness, client initiative, confidence in therapist).

2.4.4 Hypothesis 2 – At baseline, high external treatment motivation will be associated with lower therapeutic alliance

Correlational analyses were conducted to explore the relationship between treatment motivation and therapeutic alliance.

2.4.5 Hypothesis 3 – Coerced clients will report significantly poorer AOD use outcomes than will non-coerced clients

Repeated measures analysis of covariance (ANCOVA) examined changes in AOD use (alcohol, cannabis, methamphetamine, tobacco) between baseline and 15-week post-baseline assessments, and coercion (coerced vs. not-coerced). Covariates in each model were age, therapeutic alliance (bond, partnership, openness, confidence in therapist, client initiative) and treatment motivation (internal, external, help seeking, confidence in treatment).

Results

3.1 Demographics and other presenting characteristics

A total of 77 participants completed the baseline measures with 60 people completing the 15-week follow up questionnaires (78% retention). Within our sample, 59% (n=48) of participants were male, 83% (n=67) were born in Australia with only one person identifying as Aboriginal or Torres Strait Islander. The majority of our sample were single (75%, n=71) and were aged between 19 and 68 with an average age of 39 years. Most of our participants (66%, n=46) left school before completing Year 10, with a mean school leaving age of 16 years.

Our sample (n=77) consumed up to 30 standard drinks per day (Mean=3.463), up to 41 standard units (“cones”) of cannabis daily (Mean= 3.607), up to 52 cigarettes per day (Mean=13.219 daily) and were using methamphetamines on average 2 times weekly (Maximum=3 use occasions per day, Mean=0.163). Poly-drug use was common, with participants also using an average of 2.61 substances in the month prior to baseline (Maximum=6).

3.1.2 Demographic and other presenting characteristics and coercion

The mean age was significantly higher at baseline for clients in the coerced vs. not-coerced group (Mean (coerced)=33.31 years, Mean (not coerced)=42.62, $F(1,69) = 9.833$, $p=0.003$). No significant differences were found for education, employment type, current income type, relationship status or gender in coerced vs. not-coerced groups.

Coerced clients reported significantly higher cannabis at baseline than non-coerced clients ($p=0.039$, see Table 1). A non-significant trend was also found for tobacco use,

with coerced clients smoking 16.7 cigarettes per day compared to 11.5 per day in the not coerced population ($p=0.065$).

Insert Table 1 about here

3.1.3 Demographic and other presenting characteristics, treatment motivation and therapeutic alliance

Age was significantly negatively related to external motivation for treatment ($r=-0.332$, $p=0.005$) and significantly positively correlated with internal motivation for treatment ($r=0.270$, $p=0.023$), and two domains of therapeutic alliance; partnership ($r=0.276$, $p=0.033$) and confidence in therapist ($r=0.306$, $p=0.017$). No significant associations were observed for the domains of therapeutic alliance and treatment motivation and the remaining sociodemographic variables.

3.2 Hypothesis 1 – At baseline, coerced clients will report significantly higher external motivation and lower therapeutic alliance than will non-coerced clients

External motivation was significantly higher for the MERIT clients than for clients from the Counseling/Cannabis teams (Mean (MERIT)=4.330, Mean (Counseling/Cannabis)=2.509, $F(1,74)=12.604$, $p=0.001$, $p=0.001$). Clients reporting legal coercion ($n=19$, Mean=4.44) reported significantly higher external motivation than did clients reporting no coercion from any source ($n=43$, Mean=2.18) and those reporting perceived coercion only ($n=5$, Mean=2.36, $F(2,75)=15.687$, $p=0.000$). Clients reporting one source of coercion (perceived or legal, $n=17$) reported significantly higher external motivation than did those reporting no coercion at all ($n=43$, 3.76 vs. 2.18), as did those reporting two sources of coercion (perceived and legal, $n=7$, 4.61 vs. 2.18,

$F(2,75)=11.257, p=0.000$). Those reporting one source of coercion also reported significantly lower internal motivation for treatment than did those reporting no coercion (4.83 vs. 5.61, $F(2,75)=3.779, p=0.027$). No significant differences were observed for therapeutic alliance or treatment motivation on any coercion variable, nor were any differences indicated between perceived and legal sources of coercion. Therefore, as mentioned in the interest of simplicity, this paper will report the results as they pertain to the coerced and non-coerced clients.

As indicated in Table 2, coerced clients rated their external motivation significantly higher, and internal motivation significantly lower at baseline than did non-coerced clients. Coerced clients were significantly less open in therapy compared to non-coerced clients. Table 2 also highlights that coerced clients reported two-thirds of the client initiative for treatment compared to their non-coerced counterparts, but this was not statistically significant.

Insert Table 2 about here

3.3 Hypothesis 2 – At baseline, high external treatment motivation will be associated with lower therapeutic alliance

Significant negative correlations were found between external motivation and client perceptions of the therapeutic alliance subscales of bond ($r=-0.287, p=0.019$), openness ($r=0.293, p=0.017$), and client initiative ($r=0.273, p=0.026$).

A significant negative correlation was also found between the therapeutic alliance subscale of bond and the treatment motivation subscale of help seeking ($r=-0.473,$

$p < 0.001$). A significant positive relationship was found between bond and internal motivation ($r = 0.290$, $p = 0.018$). Higher reported partnership in therapy (a domain of therapeutic alliance) was associated with significantly higher internal motivation ($r = 0.473$, $p < 0.001$) and significantly lower help seeking ($r = -0.624$, $p < 0.001$), while higher confidence in therapist (subscale of therapeutic alliance) was significantly correlated to higher reported help seeking ($r = 0.419$, $p < 0.001$). Results also indicated that higher openness was associated with significantly lower internal motivation ($r = 0.283$, $p = 0.022$).

3.4 Hypothesis 3 – Coerced clients will report significantly poorer AOD use outcomes than will non-coerced clients

Table 3 displays the repeated measures ANCOVA results examining changes in alcohol, cannabis, methamphetamine and tobacco over time, according to coercion status at baseline.

Insert Table 3 about here

As indicated in Table 3, no significant differences existed between coerced and non-coerced clients in terms of changes in alcohol, cannabis, methamphetamine and tobacco use between baseline and follow-up assessment.

Discussion

This study set out to examine the role and significance of coercion on therapeutic alliance and treatment motivation on people presenting for substance use treatment. We predicted that coercion would have a significant impact on motivation for treatment and

on the ability to form a therapeutic relationship with the treating clinician. We also hypothesised that coercion would be associated with poorer AOD treatment outcomes. Our hypotheses were partially supported by our study results.

4.1 Coercion and AOD use outcomes

Contrary to our prediction, results showed that coercion, regardless of definition, did not play a significant role in presenting levels of substance use, and did not impact on changes in substance use 15 weeks following treatment entry. This suggests, as found in previous research, that coercion may play a role in treatment initiation (Wild, Newton-Taylor & Alletto, 1998) but importantly that coercion alone is not sufficient to produce positive or negative treatment outcomes in AOD clients. Given the widespread use of motivational interviewing within the clinical service targeted for the current study (NSW Health, 2008) perhaps the effects of coercion were minimised and addressed early in therapy. Further research is needed to assess if the modality of therapy and interventions used inhibits potentially negative effects of coercion. Overall, the lack of predictor relationships perhaps points to what is most important in working with complex drug and alcohol clients; thorough assessment and treatment of the individual and the specific issues that they bring to therapy. It is a reminder for clinicians to avoid generalisations and judgements about client's likelihood for positive treatment outcomes based on referral source, substance use, attitude and initial engagement in therapy.

Recent research has found that those coerced into treatment achieve similar treatment improvements as self-referred and non-coerced clients (Gregoire & Burke, 2004; Kelly, Finney & Moos, 2005), especially when client perceptions of coercion are explored. Our study supports this assertion, with our coerced clients achieving similar reductions in AOD use as their non-coerced counterparts. While the majority of research in addiction

focuses on residential substance using populations, our community-based study supports that coercion does not negatively impact on client ability to achieve positive substance use change outside of these settings. MacKain and Lecci (2010) suggest that clinicians can have negative expectations regarding coerced clients, believing that these clients are less amenable to treatment, primarily due to ambivalence and treatment resistance. This was unsupported in our study, finding no significant impact of coercion on substance use outcomes. It is important for clinicians to be aware of the potential for negative expectations in the provision of psychological treatment for AOD use, particularly to coerced clients, and to seek clinical supervision around these issues should they arise.

An interesting trend found in all coerced groups was their significantly higher use of tobacco. This raises important implications when working clinically with mandated clients and in contexts where coercion is high, to provide specific targeted intervention for tobacco use. Clients very rarely identify tobacco use as their primary substance of choice, nor do they often attend AOD treatment to address this. Coupled with the significant psychological, interpersonal, health and financial costs of tobacco use for the individual and society as a whole, the onus may fall to clinicians to be aware of the high prevalence of tobacco use in this client group and offer treatment within a harm minimisation or abstinence framework.

4.2 Motivation and coercion

As hypothesised, we found that coerced clients reported significantly higher external motivation than did their respective non-coerced counterparts. Interestingly, while coerced clients reported significantly lower internal motivation than non-coerced, this difference was not found between clients attending MERIT and the Counseling/Cannabis teams, or among legal vs. perceived coerced clients. However,

internal motivation for treatment was significantly lower for perceived coerced clients relative to non-coerced participants. These results may be explained by the internal and external reinforcing effects associated with legal coercion, as MERIT clients are given a choice as to whether they are willing to engage and participate in the treatment program. Gregoire and Burke (2004) suggest that this then may create a self-selecting bias, whereby those who are not motivated or wanting to make change with their substance use never enter treatment. Those who do choose to part take in MERIT arguably have some willingness and degree of internal motivation for change. They may also be the most motivated clients, and are rewarded with tangible incentives in the form of reduced criminal sentences for their efforts. Those self-referring to AOD treatment, while experiencing similar short term benefits of reduced or abstained substance use such as better concentration, more energy, clearer cognitive processes, improved interpersonal relationships (Marsh & Dale, 2006), do not benefit from the additional motivation attributed to short term court outcomes.

4.3 Therapeutic alliance and coercion

For the most part, our hypothesis that coerced clients will report significantly lower therapeutic alliance than non-coerced clients was not supported. Despite Barrowclough, Meier, Beardmore and Emsley (2010) finding that attributes and characteristics generally believed to be associated with coercion, poor insight and negative attitudes toward treatment, resulted in significantly poorer alliance among people with psychosis and comorbid AOD use problems, our results were not consistent with their findings. We found no significant relationship between measures of the therapeutic alliance (bond, partnership, confidence in therapist, openness and initiative) and clients of the MERIT and Counseling/Cannabis teams. However, it is important to note that on average, counselling/cannabis clients reported higher levels of confidence in therapist,

openness and initiative, while MERIT clients reported higher bond and partnership with their therapist. It may be that the relational facets of alliance, bond and partnership, were higher in MERIT clients due to some of these clients not identifying as coerced.

Alternatively, perhaps the warmth, understanding, and active listening components of counselling were a welcome change from the pressures and demands of other services such as court, or Probation and Parole. Similarly, no significant relationship was found between coerced and non-coerced clients in relation to bond, partnership, and confidence in therapist or client initiative. However, results indicated that non-coerced clients were significantly more open than their coerced counterparts, perhaps reflecting their willingness to engage in the therapy process. Poorer perceived openness in our coerced clients may be reflective of higher levels of distrust, poorer emotional regulation and difficulty relating socially and interpersonally with others as has been demonstrated in other research with coerced populations (Shearer & Ogan, 2002). This is likely to affect how coerced individuals rate and perceive the quality of their relationship with their counsellor. It may also be true that counsellors respond and treat these clients differently upon treatment entry.

4.4 Motivation and therapeutic alliance

This study, unlike many others, examined the relationship between measures of motivation and therapeutic alliance with the aim of better understanding the complex nature and dynamics of these constructs in clients attending community drug and alcohol treatment. Our hypothesis that high external motivation would be associated with lower therapeutic alliance at treatment entry was only partially supported. A significant, negative correlation was found between external motivation and bond and openness as hypothesised. However, a significant positive relationship was found between client initiative and external motivation, and no significant associations were

evident for partnership and confidence in therapist. One possible explanation for finding that high external motivation is partially related to lower therapeutic alliance at treatment entry is likely related to our more detailed examination of therapeutic alliance and motivation, looking at the various facets of these constructs rather than alliance and motivation more generally. Our results then, add an interesting insight into the interactions of components of these concepts and assist in developing a comprehensive understanding of these complex phenomena. Clients who reported high initiative in treatment also reported significantly higher external motivation and help seeking and lower intrinsic motivation than those who reported low initiative. This supports past research (Cahill et al. 2003) suggesting that external motivation has a significant role in treatment, due partly to the desire to minimise negative consequences, and thus perhaps a greater desire to receive help.

Clients reporting high therapeutic bond at baseline reported significantly higher internal motivation and significantly lower external motivation and help seeking at the same timepoint. Similarly, higher perception of partnership with the therapist was related to significantly higher reported internal motivation and lower help seeking. These results suggest that those clients who are intrinsically motivated to attend treatment are perhaps more receptive to a positive relationship with the therapist and components of alliance, whereas the development and identification of these variables are less important in clients experiencing high levels of external pressure to attend treatment. This may relate to how actively psychologically and cognitively the individual is engaged in therapy, which plays a significant role in effective client treatment and their engagement in the therapeutic process (Rosen, 2004). Interestingly, our results also reveal a significant relationship between openness and motivation for treatment, with those reporting high internal motivation being significantly more open than clients with high extrinsic

motivation. This is again supported in the literature (Norcross, 2010) and suggests that internally motivated clients are more receptive to information sharing and engaging interpersonally with their clinician. It makes sense, then, that clients motivated to engage in treatment by external influences may be more reserved and less open with the clinician as their goals, purpose and motivation for attending therapy are still developing.

4.5 Coercion and age

An important finding in participants in our study was the significant relationship between age and coercion. Results showed that younger clients were more likely to be coerced than older clients in both the MERIT and perceived coerced groups. Similarly, Goodman, Peterson-Badali and Henderson (2011) found that within their sample of emerging adults, aged 18-25, increased age was associated with reduced perceptions of coercion and external motivation, but greater intrinsic motivation and reasons for seeking and engaging in drug and alcohol treatment. Our results support these findings for internal and external motivation. Goodman et al. (2011) suggest that this is likely due to the developing introspection of these aging clients and the shifting perception of AOD use as advantageous to recognising the detrimental impact that this is having particularly on achieving their life goals. This has significant implications for understanding the relationship between age and coercion in our study. Clients with less motivation or desire to change their substance use may be more sensitive to the input of family and friends regarding their AOD use. Younger clients, particularly those in early adulthood, typically place a great deal of significance on autonomy and independence, and therefore are likely to react differently, more negatively, to external pressures to change than older clients.

4.6 Limitations of the study

A significant limitation of the current study is the poor statistical power due to relatively small numbers of participants within each group. This is a common problem faced by researchers especially when using participants from a real-world community-based drug and alcohol sample as in this study (Simpson, Joe & Rowan-Szal, 1997). Existing research in substance abuse and coercion tends to utilise captive populations of clients such as residential treatment and prisons. As such, our retention rates are less than would be expected in inpatient settings.

Potential clients were asked for preliminary consent to pass their contact details to the research assistant by their treating clinician (see Kay-Lambkin et al. 2012, for more detail). Although clinicians did not know who was participating in the research, it is possible that a selection bias came into play, where clinicians excluded or included particular clients based on some subjective criteria that was not accounted for in this study.

Given then proportion of clients in the sample referred by DoCS and Probation and Parole, it may be that clients intentionally under-reported their AOD use for fear of negative consequences from these organisations. Clients who have a history with these agencies may be aware of the potential for clinical notes to be subpoenaed which is likely to influence their accuracy in disclosing information to their therapist and the research team. We were also unable to determine the number of treatment sessions attended by each client participating in the study. It is thus very possible that difference in treatment attendance would have had an impact on the variables measured in the study.

The NSW Central Coast is an area with significant rates of domestic violence, abuse and neglect of children, which as they age, inevitably results in a traumatised population of adults. These factors increase the likelihood of developing drug and alcohol problems later in life (Marsh & Dale, 2006). As with any study, the generalizability of these results to wider populations must be done so with caution. Nonetheless this study has made important contributions to the understanding of coercion, alliance and motivation on substance use in community based drug and alcohol clients.

Conclusions

Coercion, motivation and therapeutic alliance are regarded as fundamental components in therapy and have a particularly important role in addiction populations. Despite this, our study is among the first to examine the relationship between these constructs in clients with current, problematic AOD use. We found that external motivation was significantly higher in coerced clients and therapeutic alliance was lower, however this did not have an impact on treatment outcomes 15-weeks post-baseline. Given that we found a significant relationship between age and coercion, as did Rosen et al. (2004), it is important to recognize the difference in conceptualization of coercion and the usefulness or detrimental impact that this may have in the effectiveness of therapy with younger clients. Of particular interest may be substance using and/or offending youth, who are typically very difficult to engage and maintain in treatment.

It seems that enforcing and engaging clients in treatment (coercion and therapeutic alliance) both play a significant role in drug and alcohol treatment. With high levels of substance use in Australia and internationally, continued vigilance is necessary to

understand the complex dynamics that contribute to treatment initiation and successful intervention with substance using clients.

Table 1. *Baseline substance use for coerced and non-coerced clients**.

Substance Type**	Participant Group	n	Mean	Std. Deviation	F
Alcohol	Not Coerced	54	3.649	5.614	$F(1,79) 2.13, p=0.646$
	Coerced	27	3.092	3.960	
Cannabis	Not Coerced	54	2.364	5.168	$F(1,79) 4.509, p=0.040$
	Coerced	27	6.193	11.104	
Heroin	Not Coerced	54	0.093	0.293	$F(1,79) 0.798, p=0.374$
	Coerced	27	0.037	0.192	
Other Opiates	Not Coerced	54	0.230	0.634	$F(1,79) 1.148, p= 0.287$
	Coerced	27	0.087	0.388	
Methamphetamines	Not Coerced	54	0.151	0.451	$F(1,79) 0.095, p=0.759$
	Coerced	27	0.188	0.622	
Cocaine	Not Coerced	54	0.167	0.575	$F(1,79) 0.198, p=0.658$
	Coerced	27	0.111	0.424	
Tranquilisers	Not Coerced	54	0.230	0.590	$F(1,79) 0.503, p=0.480$
	Coerced	27	0.112	0.423	
Barbiturates	Not Coerced	54	0.130	0.436	$F(1,79) 0.315, p=0.576$
	Coerced	27	0.074	0.385	
Hallucinogens	Not Coerced	54	0.148	0.492	$F(1,79) 1.190, p=0.279$
	Coerced	27	0.410	0.193	
Inhalants	Not Coerced	54	0.185	0.585	$F(1,79) 0.798, p=0.374$
	Coerced	27	0.074	0.385	
Tobacco	Not Coerced	54	11.454	12.071	$F(1,79) 3.501, p=0.065$
	Coerced	27	16.750	11.88	
Poly substance	Not Coerced	47	2.550	1.599	$F(1,72)0.190, p=0.664$
	Coerced	27	2.700	1.068	

*Coerced clients include those who were legally mandated into treatment as well as those who reported feeling coerced into treatment, regardless of the source.

** Opiate Treatment Index q-score: an estimate of the quantity and frequency of substance use for the month prior to assessment, with a score of 0.14 equating to once weekly use, 1 indicating daily use, 2 twice daily use, and so on.

Table 2. *The association between coercion (coerced vs. not coerced) and components of therapeutic alliance (bond, partnership, confidence in therapist, openness, client initiative) and treatment motivation (internal motivation, external motivation, help seeking, confidence in treatment) at baseline assessment.*

	N	Mean	Std. Deviation	F
External Motivation				
Coerced	27	3.978	1.582	$F(1,74) 20.991, p<0.001$
Not Coerced	49	2.182	1.664	
Internal Motivation				
Coerced	27	5.014	1.189	$F(1,74) 5.189, p=0.026$
Not Coerced	49	5.61	1.034	
Help Seeking				
Coerced	26	5.295	3.857	$F(1,73) 1.365, p=0.247$
Not Coerced	49	6.452	4.197	
Confidence in Treatment				
Coerced	27	8.578	14.675	$F(1,75) 0.053, p=0.819$
Not Coerced	50	7.884	11.458	
Bond				
Coerced	24	5.403	1.688	$F(1,65) 0.487, p=0.488$
Not Coerced	43	5.904	3.275	
Partnership				
Coerced	24	5.292	1.951	$F(1,64) 0.103, p=0.750$
Not Coerced	42	5.464	2.186	
Confidence in Therapist				
Coerced	24	6.403	4.145	$F(1,65) 1.105, p=0.297$
Not Coerced	43	7.781	5.617	
Openness				
Coerced	24	4.565	1.4	$F(1,65) 6.309, p=0.015$
Not Coerced	43	5.386	1.215	
Initiative				
Coerced	24	6.385	12.55	$F(1,65) 0.545, p=0.463$
Not Coerced	43	9.903	15.312	

Table 3. *Changes in substance use between baseline and 15-week follow-up assessment as a function of coercion.*

Substance Type*	Participant Group	Baseline	15-weeks post-baseline	F**
Alcohol	Not Coerced	5.124	2.978	$F(1,33)=0.214$ 2.13, $p=0.647$
	Coerced	3.350	3.347	
Cannabis	Not Coerced	4.015	3.951	$F(1,33)=0.057$, $p=0.813$
	Coerced	4.239	5.166	
Methamphetamines	Not Coerced	0.006	0.015	$F(1,33)=1.011$, $p=0.322$
	Coerced	0.003	0.143	
Tobacco	Not Coerced	14.294	12.954	$F(1,33)=0.129$, $p=0.722$
	Coerced	18.399	12.131	

* Opiate Treatment Index q-score: an estimate of the quantity and frequency of substance use for the month prior to assessment, with a score of 0.14 equating to once weekly use, 1 indicating daily use, 2 twice daily use, and so on.

** Covariates in each model: Therapeutic alliance subscales (bond, partnership, openness, client initiative, confidence), Treatment motivation subscales (internal motivation, external motivation, help seeking, confidence in therapy), and age.

Discussion

This study set out to explore the role and significance of therapeutic alliance and treatment motivation on people presenting for substance use treatment, including those who perceived that they were coerced to attend.. It must be noted that due to our small sample size, it is possible that our non-significant results may be explained by insufficient power to detect significant differences that exist between substance use, treatment motivation, therapeutic alliance and coercion in the population generally. Nonetheless, the findings of this study highlight important implications for the treatment provision of community based AOD clients.

We explored the presenting characteristics of clients attending a community drug and alcohol counselling service in relation to coercion, motivation, therapeutic alliance and substance use as well as the effect that these variables had on treatment outcomes 15 weeks later. We predicted that coercion would have a significant impact on substance use outcomes, on motivation for treatment, and on the ability to form a therapeutic relationship with the treating clinician. We hypothesised that coerced clients would have significantly higher external motivation and lower therapeutic alliance than non-coerced clients at presentation for treatment. Our hypotheses were somewhat supported by our study results

External motivation was significantly higher in coerced clients (both legally mandated and perceived coerced groups) and in regard to alliance, therapeutic alliance was lower in clients who perceived they were coerced (although not for legally mandated (MERIT) clients). In relation to the predicted relationship between therapeutic alliance and motivation, our hypothesis was overall supported, although partnership, one domain of therapeutic alliance, was not significantly related to external motivation.

The current study adds to the literature exploring the relationship between therapeutic alliance, motivation and coercion on substance use in a number of ways. Firstly, we overcame conceptual flaws in past research, by conceptualising coercion in terms of legal coercion, perceived coercion to attend treatment and potential combined effects of legal mandate and perceived coercion. The clients were recruited from a community-based drug and alcohol service, and no exclusion criteria were implemented, which allowed us to capture the real world complexities evident within a sample of drug and alcohol clients. We also investigated the effects of alliance, motivation and coercion on outcomes related to a range of substances including alcohol, tobacco, cannabis, heroin, opiates including methadone, methamphetamine, tranquillisers, barbiturates, hallucinogens, and inhalants. The relationship between motivation and therapeutic alliance has not previously been examined in depth in substance using clients, despite the well-established association between higher motivation and alliance with improved substance use.

6.1 Presenting characteristics of clients: coercion, motivation and therapeutic alliance

Coercion and substance use

Contrary to our prediction, results showed that coercion, regardless of definition, did not play a significant role in presenting levels of substance use, and did not impact on substance use 15 weeks following treatment entry. This suggests, as found in previous research, that coercion may play a role in treatment initiation (Wild, Newton-Taylor & Alletto, 1998) but importantly that coercion alone is not sufficient to produce positive or negative treatment outcomes in drug and alcohol clients.

Recent research has found that those coerced into treatment achieved similar treatment improvements as self-referred and non-coerced clients (Farabee,

Prendergast & Anglin, 1998; Gregoire & Burke, 2004; Hiller, Knight, Broome & Simpson, 1998; Kelly, Finney & Moos, 2005), especially when client perceptions of coercion were explored. Our study supports this assertion, with our clients who perceived coercion achieving similar reductions in substance use as their non-coerced counterparts. While the majority of research in addiction focuses on residential substance using populations, our community-based study further indicates that coercion does not negatively impact on client ability to achieve positive substance use change outside of these settings. MacKain and Lecci (2010) suggest that clinicians can have negative expectations regarding coerced clients, believing that these clients are less amenable to treatment, primarily due to ambivalence and treatment resistance. This was unsupported in our study with coerced clients demonstrating comparable substance use at 15 weeks post- baseline as non-coerced clients. The negative expectations for coerced clients may reflect a trend for inaccurate clinician perspectives of coercion in therapy. It is important to be aware of this in the provision of psychological treatment for substance use, as irrespective of perceived coercion or referral source, our study showed that all clients attending drug and alcohol counselling have similar potential and ability to achieve successful reduction and abstinence from substances.

Despite coercion having no significant impact on substance use outcomes, interesting differential patterns of substance use emerged at baseline. Counselling/Cannabis Team clients reported double the consumption of alcohol and smoking, and almost three times the amount of cannabis, compared to MERIT (coerced) clients. Although this difference was not statistically significant, these results raise important potential differences that need to be considered when working with complex drug and alcohol clients. Perhaps a significant factor in client's self-referral to drug and alcohol services is severity

of substance use. Substantially higher daily amounts of alcohol and cannabis use are likely accompanied by more significant physical, psychological, emotional, interpersonal and social dysfunction, leading to the decision to attend treatment. Lower substance use in MERIT clients may be accounted for by their opportunistic entrance into treatment. The individual may be in the pre-contemplative or contemplative stages of change when unexpectedly provided with the opportunity to address their substance use utilising this diversionary program. Clinically, it may be noteworthy that the demographics of the clients attending the Central Coast Alcohol and Other Drug Service are quite similar across the teams, characterised by predominately male, unemployed and poorly educated clients. Perhaps these variables play a more profound role on the effects of substance use treatment than coercion alone, thus explaining the non-significant finding.

Our results also support the literature that coercion, defined by referral source, is a narrow indicator of the potential impact coercion may have on clients (Policin & Weisner, 1999; Wild, Newton-Taylor & Aletto, 1998). For example, when taking a broader view of coercion, our results indicated that clients who identified perceived coercion to attend treatment reported significantly higher cannabis use at baseline than non-coerced clients.

An interesting trend found in both coerced groups was the higher tobacco use in coerced clients. This raises important implications when working clinically with mandated clients and the broader drug and alcohol service where coercion is high, to provide specific targeted intervention for tobacco use. Clients very rarely identify tobacco use as their primary substance of choice, nor do they often attend Drug and Alcohol treatment to address this specifically. Given the significant psychological, interpersonal, health and financial costs for the individual and society as a whole, and

the likelihood of clients presenting to address their tobacco use, the onus falls to the clinicians to be

aware of the high prevalence of tobacco use in this client group and offer treatment within a harm minimisation or abstinence framework.

Another important finding in clients presenting for drug and alcohol treatment in our study, was the significant relationship between age and coercion. Results showed that younger clients were more likely to report they were coerced than older clients in both the MERIT and perceived coerced groups. Similarly, Goodman, Peterson-Badali and Henderson (2011) found that within their sample of emerging adults, aged 18-25, increased age was associated with reduced perceptions of coercion and external motivation, but greater intrinsic motivation and reasons for seeking and engaging in drug and alcohol treatment. Our results support these findings for internal and external motivation. Goodman et al. (2011) suggest that this is likely due to the developing introspection of these aging clients and the shifting perception of substance use as advantageous to recognising the detrimental impact that this is having particularly on achieving their life goals. This has significant implications for understanding the relationship between age and coercion in our study. Clients with less motivation or desire to change their substance use may be more sensitive to the input of family and friends regarding their drug and alcohol use. Younger clients, particularly those in early adulthood, typically place a great deal of significance on autonomy and independence, and therefore are likely to react differently, more negatively, to external pressures to change than older clients.

Goodman et al. (2011) suggest that for younger adults, the source of external motivation is an important factor in the way in which it is interpreted. Power plays a significant role in perceived coercion, and it is suggested that while family have an authoritative relationship with the young person, friends do not function within the

same power dynamic, and are thus less likely to exert and be interpreted as coercive (Goodman, Peterson-Badali & Henderson, 2011).

As age increases, so too does the probability that the individual has had previous legal involvement and negative life experiences related to their substance use such as interpersonal conflict, financial and employment difficulties as well as physical and psychological health issues. Marlowe et al. (2001) found that individuals can become desensitised to adverse consequences and threats regarding their substance use and learn to identify boundaries of their behaviour to avoid negative repercussions. Younger clients therefore, are less likely to have developed this ability to determine the acceptable boundary of their substance use, are comparatively unfamiliar to threats and the possibility of detrimental results such as imprisonment, familial isolation, relationship breakdown etc. and subsequently have a greater sensitivity to external coercive influences.

Motivation and coercion

As hypothesised, we found that coerced clients, MERIT and those who perceived coercion more generally, reported significantly higher external motivation than did their respective non-coerced counterparts. MERIT clients have formal legal coercion to attend treatment and coerced clients, by definition, have identified extrinsic pressures as contributing to their seeking treatment, potentially explaining this result. Interestingly, while coerced clients reported significantly lower internal motivation than non-coerced, this difference was not found between clients attending MERIT and the counselling and cannabis teams. This may be due to the flaw in conceptualising court mandated clients as coerced, without assessing individual experience and perceptions, leading to the masking of an accurate picture of motivation in mandated clients. Alternatively, these results may be explained by the internal and external

reinforcing effects associated with legal coercion as MERIT clients are given a choice as to whether they are willing to engage and participate in the treatment program. Gregoire and Burke (2004) suggest that this then may create a self-selecting bias, whereby those who are not motivated or wanting to make change with their substance use never enter treatment. Those who do choose to part take in MERIT arguably have some willingness and degree of internal motivation for change. They may also be the most motivated clients, and are rewarded with tangible incentives in the form of reduced criminal sentences for their efforts. Those self-referring to drug and alcohol treatment, while experiencing similar short term benefits of reduced or abstained substance use such as better concentration, more energy, clearer cognitive processes, improved interpersonal relationships (Marsh & Dale, 2006), do not benefit from the additional motivation attributed to short term court outcomes.

People attending treatment due to external pressures do not necessarily perceive that they have been coerced and equally those referring themselves to treatment are not necessarily voluntary clients (Sullivan et al. 2008). Our results support these notions, given that not all MERIT clients perceived coercion to attend treatment. This ultimately meant that some MERIT clients recognised the need to change and experienced some degree of intrinsic motivation for change independent of external pressure to attend treatment by court. Similarly, clients not in the court ordered MERIT service reported feeling coerced into treatment, which may result in feelings of resentment, ambivalence and antipathy in clients who do not perceive autonomy or control over their treatment entry. This difference may contribute to our understanding of motivational differences between coerced and non-coerced clients. Self – Determination Theory suggests that individuals integrate and internalise external pressures and motivation in order to successfully achieve their life goals (Deci & Ryan, 1985). These external forces or coercive influences also have an important role in

people regulating their behaviour and ultimately serve to allow them to live and function autonomously. Self-Determination Theory proposes that autonomy lies along a continuum with extrinsic regulation or coercion at one end and complete autonomy or self-regulation at the other. According to this theory, more autonomous behaviour is related to more stable and enduring behavioural change than enforced behaviour. This is likely due to the inevitable distinction of the external influences upon which the behavioural change is dependent (Markland, Ryan, Tolbin & Rollnick, 2005).

Importantly, Ryan and Deci (2006) indicate that the optimum level of external influence and self-regulated behaviour is uniquely individual, which accounts for the variability in not only perceptions of coercion and motivation but also in the therapeutic outcomes of those within otherwise similar groups, for example our legally mandated or self-referred clients. However, it must be considered that one ultimately has a choice in any situation. Granted that we can be faced with two undesirable alternatives, such as stop drinking or get divorced, reduce cannabis or face unemployment, stop abusing heroin or cope with the imminent removal of your children into the care of the Department of Community Services (DoCS), each choice as unpleasant as it may be, is viable. This means that clients have a choice, although they must live with the consequence of their decision. This has important implications for the clinical treatment of these clients and exploring their values and motivation for change in order to progress through the stages of change (Prochaska & DiClemente, 1986), reduce animosity and resentment about change and achieve their substance use goals to attain the desired consequence. Motivational Enhancement Therapy has a significant and evidence based role in helping clients evaluate these decisions, developing commitment, motivation and initiating substance use change in accordance with the client's valued course of action (NSW Psychosocial Guidelines, 2008).

Motivation and substance use

The current study assessed four components of motivation; help seeking, treatment confidence and internal and external motivation as measured by the Treatment Motivation Questionnaire (Ryan et al. 1995). We found that in line with our hypothesis that external motivation would have a significant impact on substance use, high external motivation and higher help seeking were related to significantly higher use of a number of substances at baseline. Specifically, greater use of heroin, other opiates, methamphetamine, cocaine, tranquillisers, barbiturates, hallucinogens and inhalants was related to more extrinsic pressure to attend treatment and a greater internal desire to seek treatment. These results are in line with findings from a study conducted by Gregoire & Burke (2004) who found that clients legally mandated into treatment were three times more likely to be in the action phase of rather than the contemplative stage. Given the significant deleterious impact of substance use, it is reasonable to find a positive relationship with help seeking, as individuals receive feedback from significant others, family, social supports, and colleagues. This may or may not be experienced as external motivation, and potentially stimulates the evaluation of the advantages and disadvantages of continued use.

Kelly, Finney & Moos (2005), who although contrary to our study found that mandated clients were less motivated and reported lower substance use at presentation, propose an alternative explanation for our finding. They suggest that higher quantities and frequency of drug and alcohol use may relate to a more dysfunctional pattern of substance use. This may mean that in our coerced sample, external sources of motivation such as family, friends and health professionals may not identify substance misuse in those using smaller amounts, while those abusing greater quantities of substances more frequently will more easily attract the concern of others

due to a greater level of dysfunction. These clients attend counselling due to pressure, either intrinsic or extrinsic, to change their substance use. Consequently, higher substance use is likely associated with a greater degree of psychosocial problems, potentially resulting in the individual being more anxious about needing help and discontentment with their substance use when entering into drug and alcohol treatment.

In terms of intrinsic motivation, lower internal motivation in our study was related to significantly higher use of heroin, other opiates, methamphetamine, cocaine, tranquillisers, barbiturates, hallucinogens and inhalants. Overall these results suggest that clients with high internal motivation to change their substance use, were using lower amounts of illicit drugs on presentation to the DACS and is possibly indicative of more perceived control over their substance use. Interestingly, and contrary to results found by McBride et. al. (1994), we found that higher tobacco use was associated with significantly lower help seeking, suggesting that the more cigarettes that clients smoked, the less willing they were to initiate and accept treatment for this substance. This is concerning given the known health risks associated with tobacco use. McBride and colleagues suggested that increased awareness of health risks in cigarette smokers in their study was associated with significantly higher internal motivation compared to other substances. However, eighteen years later, it is possible that participants in our sample have been saturated and desensitised to the health warnings in media and health campaigns, accounting for our contradictory results.

An important difference in the substance use patterns between internal and external motivation was in relation to methamphetamines, with internal motivation not significantly related to the use of this drug at baseline. This suggests that methamphetamine users are perhaps most responsive to external motivation for change, or perhaps that the clients in our sample did not experience significant enough

thresholds of intrinsic motivation to influence their methamphetamine use upon presentation for treatment. MERIT clients reported double the average methamphetamine used compared to those in the counselling/cannabis clients. This may be explained by the opportunistic nature of diversionary intervention and the capturing of a more accurate reporting of substance use, given MERIT has the capacity to conduct urinalysis testing to confirm substance use levels. No such difference was found when examining perceived coerced and non-coerced clients, which may further support this notion.

Overall, treatment confidence was not significantly related to substance use, which suggests that client's perception of the helpfulness of therapy, or unhelpfulness of therapy did not preclude them from attending treatment, and was irrelevant in determining the level of their substance use at baseline. This indicates that the clients in our study were willing to attempt counselling regardless of their expectations of outcome, and that these expectations did not influence their substance use upon treatment entry.

In our study, motivation was not related to baseline cannabis use and only minimally influenced alcohol consumption, with external motivation associated with higher baseline alcohol use. This is particularly interesting given the significant relationships between the other substances examined as discussed above. The social and cultural acceptance of alcohol and cannabis may have a significant bearing on this finding. In the Australian National Household Drug Survey (AIHW, 2007) almost 25% of people responded neutrally, neither approving nor disapproving of regular use of cannabis, while 45% approved regular alcohol consumption, and an additional 33% did not disapprove of regular drinking (AIHW, 2007). This highlights a dispassionate attitude, if not social acceptance, of cannabis and alcohol within our society. The disparity in motivation between alcohol, cannabis and the remaining drug use classes

may also be explained by the illicit nature of the drugs used and the general perception of what constitutes the “harder drugs”. This relates to the perception of some substances, particularly those that are intravenously injected such as heroin and methamphetamine, as more unstable and dangerous, which can act as a deterrent, a motivator for treatment, and perpetuates negative perceptions of substance use. Similarly this is reflected in social acceptability literature regarding substances. In the same study mentioned above (AIHW, 2007), less than 5% of people approved of regular use of illicit substances (with the exception of cannabis), with regular users more likely to encounter external pressures to cease their use.

It is important to consider the possible implications of the similarity in substance use profiles in relation to motivation for the illicit substances assessed in the study, with the exception of cannabis and methamphetamine. Higher external motivation and lower internal motivation was associated with significantly greater use of heroin, other opiates, cocaine, barbiturates, tranquilisers, hallucinogens, and inhalants. Given that the use of illicit substances is often chaotic and irregular, at least initially, and have significant detrimental impacts on performing even daily routine, it may be that higher external pressures from friends, family, employers, support agencies is associated with, and perhaps initiates, transition into substance use treatment earlier or more effectively. Lower internal motivation for treatment may also be related to the comparatively infrequent pattern of use of illicit substances compared to cannabis, with our results indicating much less than daily use of these substances on average compared with multiple episodes of cannabis daily. This may reflect, then, a bias in these clients who do not view their sporadic use of illicit substances as problematic, nor regard this as dependence or more broadly addiction.

This misconception of substance use severity in clients was similarly reported by McBride et. al. (1994). Unfortunately client perceptions of their substance use did

not fall into the scope of the current study, and further research into this would be beneficial. Poly substance abuse was high in our sample with clients in all conditions using between 2-3 substances each, on average. This raises an important theoretical consideration, in that clients have not necessarily sought, nor are they automatically motivated, to address all identified substances in treatment. This means that a client who is attending treatment to address their cannabis use who also happens to be using inhalants may have a differential motivation profile for these substances, accounting for the similarity in profile between the illicit substances when considering that their prevalence and use was substantially less compared to cannabis, alcohol and tobacco.

Therapeutic alliance and coercion

Therapeutic alliance has been established as a significant ingredient in successful therapy. Therapeutic alliance was measured using the ARM (Agnew-Davies et al. 1998) and explored five facets of therapeutic alliance. These were bond (warm, empathic engagement), partnership (the extent to which the client feels he/she is working collaboratively with their therapist), confidence (degree of optimism and respect for the therapy/the therapist in which the client is engaged), client initiative (to what degree the client takes ownership and direction of therapy) and openness (degree to which the client feels comfortable disclosing personal information with their therapist) (Agnew-Davies et al. 1998).

For the most part, our hypothesis that coerced clients will report significantly lower therapeutic alliance than non-coerced clients was not supported. Despite the Barrowclough, Meier, Beardmore and Emsley (2010) finding that attributes and characteristics generally believed to be associated with coercion, poor insight and negative attitudes toward treatment, resulted in significantly poorer alliance, our results were not consistent with their proposition.

We found no significant relationship between measures of the therapeutic alliance (bond, partnership, treatment confidence, openness and initiative) between MERIT and counselling/ cannabis clients. However it is important to note that on average, counselling/ cannabis clients reported higher levels of treatment confidence, openness and initiative while MERIT clients reported higher bond and partnership with their therapist. It may be that the relational facets of alliance, bond and partnership, were higher in MERIT clients due to some of these clients not identifying as coerced. Alternatively, perhaps the warmth, understanding, active listening components of counselling were a welcome change from the pressures and demands of other services such as court, probation and parole etc. Similarly, no significant relationship was found between coerced and non-coerced clients in relation to bond, partnership, confidence in therapy or client initiative however, results indicated that non-coerced clients were significantly more open than their coerced counterparts.

These results suggest that therapeutic alliance was not significantly related to coercion in our sample, which may be explained by our reasonably small sample, although some non-significant differences were evident between coerced and non-coerced clients on domains of therapeutic alliance in the direction in which we expected. It is likely that higher openness in our non-coerced sample reflects their willingness to engage in the therapy process. Poorer perceived openness in our coerced clients may be reflective of higher levels of distrust, poorer emotional regulation and difficulty relating socially and interpersonally with others as has been demonstrated in other research with coerced populations (Shearer & Ogan, 2002). This is likely to affect how coerced individuals rate and perceive the quality of their relationship with their counsellor. It may also be true that counsellors respond and treat these clients differently upon treatment entry.

It is important to note that these results pertain to presenting characteristics of

clients and it may be that with time, these differences may change. More research on this area would be helpful in determining the pattern of alliance over time and the role that coercion plays.

Therapeutic alliance and substance use

Contrary to previous research (Connors et. al., 2000; Meier, Barrowclough & Donmall, 2005 & Meier et. al. 2005), our hypothesis that higher therapeutic alliance would result in significantly better substance use outcomes was not supported. No significant relationship was found between therapeutic alliance and substance use outcomes at 15 week follow up. It must be noted that, due to the rather small sample size of our study, the statistical power was reasonably low. However, as highlighted in the Myers, Pasche & Adam (2010) study, which considered the effects of substance use type on the relationship between therapeutic alliance and outcomes, some interesting profiles of baseline substance use and measures of alliance emerged in our sample.

Results indicated that lower reported bond was associated with significantly higher use of the following drugs at treatment entry; heroin, other opiates, methamphetamine, cocaine, tranquillisers, barbiturates, hallucinogens and inhalants. This highlights the significance of early communication with the client in developing rapport and a good working relationship from the outset. It may also suggest that clients using these substances are less able to form effective relationships when use is current and active, which is likely related to the level of disconnectedness that is associated with substance use and intoxication effects.

It was also found that higher reported partnership and openness were associated with higher substance use in the illicit substances mentioned above and tobacco, with the exception of methamphetamines which was not related to openness.

This may be explained by the effects of poor emotional regulation in drug and alcohol clients and their difficulty generally in regulating and filtering their cognitions leading perhaps to over-disclosure early in the therapeutic relationship. While this may superficially seem encouraging, over-disclosure of information, particularly of a personal nature before a trusting, safe and therapeutic relationship has been developed, can be detrimental to the emotional and psychological well-being of the client. This may result in the triggering of traumatic responses and the initiation of avoidance behaviours as the individual struggles to regain a safe balance in the therapy relationship (Marsh & Dale, 2006). Therapists working with people using these substances should be aware of this potential, and attuned to when these processes may be in play. Alternatively, the relationship between higher partnership and higher substance use may be related to a higher desire to change in the client, with those with a greater severity of substance use perhaps recognising the negative consequences of their substance use more easily and therefore viewing their relationship with their therapist more positively.

The relationship between higher measures of alliance and higher substance use when presenting for treatment may also relate to the intoxication effects of substance use, potentially preventing clients in our sample from actively engaging in interpersonal relationships with their therapist. Intoxication ultimately creates a dissonance from reality in many aspects of an individual's functioning, including their ability to comprehend and reflect on their experiences in a genuine and productive way. This may ultimately prevent them from relating and engaging with others effectively. Perhaps then, this relationship between substance use, bond, partnership and openness is merely an indication of the incapacity of clients to feel connected with their therapist at treatment engagement when they are emotionally, psychologically and physically disconnected from reality.

Similarly, higher confidence in therapist and client initiative were associated with significantly higher substance use on presentation. These results relate to heroin, other opiates, methamphetamine, cocaine, tranquilisers, barbiturates, hallucinogens and inhalants. This suggests that clients who are more optimistic about therapy and those who take a great deal of responsibility in the direction of treatment, were also those using more substances at baseline. Perhaps clients who are most optimistic and confident about treatment have some realisation that there is much room for improvement and change in their current level of functioning and behaviour.

Conversely, the incongruence between current and optimal psychological, social, physical, health and occupational functioning may be less obvious in those using comparatively less substances. Whilst appearing positive on the surface, higher acceptance of responsibility for treatment may be detrimental particularly in the early stages of treatment. A client who is too directive in therapy is perhaps less open to the suggestions and feedback of the therapist, and may be reluctant to open themselves to the therapy process. Alternatively, taking responsibility for therapy may mean that the client takes ownership of any perceived failures and challenges of the intervention. Higher sensitivity to negative aspects of therapy, whether that be an unsuccessful attempt at change, unmet expectations about progress or relapse although considered a normal and even therapeutic component of drug and alcohol treatment, could lead to detrimental psychological well-being such as depression and anxiety symptomology (Norcross, 2010). Again, therapists working with clients using drugs and alcohol need to be sensitive to these issues, modify their early interactions with clients and focus of treatment accordingly.

An interesting relationship between alliance and tobacco use was evident in our sample. The association between tobacco and measures of alliance were opposite to those found with illicit substances; with lower confidence in treatment and client

initiative associated with higher reported tobacco use. As mentioned, it is uncommon for clients to present to drug and alcohol services, identifying tobacco as their primary substance of concern. This may be due to the comparative acceptability of tobacco use as a legal substance and the absence of intoxication effects and other undesirable psychosocial consequences such as crime. Similarly, there is a ready availability of treatments targeting tobacco use outside of formal drug and alcohol services, including nicotine replacement therapies, hypnosis and telephone counselling support services (Centre for Substance Use Treatment, 2009). Research suggests that addiction is difficult to treat and often involves multiple lapses and relapses before successful and prolonged behaviour change is achieved (DiClemente, 1999). Given the availability of cigarettes, the psychological triggers appearing in many social contexts including media, workplaces and restaurants, as well as the evidence that most cigarette smokers attempt to quit several times before they are successful, it is understandable that client confidence in psychological treatment for tobacco use is low and that higher use is associated with lower confidence. It follows that those who smoke more heavily have a greater scepticism and established dependence on the behaviours as well as the physiological and psychological sensations associated with nicotine addiction. This is a concern, however, with evidence suggesting that alcohol and cannabis use often take place in conjunction with tobacco use, and that tobacco use may stimulate cravings for these substances (Thornton, Baker, Lewin, Kay-Lambkin, Kavanagh, Richmond, Kelly & Johnson, 2011).

Cannabis and alcohol use was not influenced by therapeutic alliance in the same way as the other substances examined in the study. This may be due to the fact that cannabis and alcohol dependence develop more incrementally than other substances due in part to the acceptability and the relative chronicity of the use of these substances within our society (Akers, 2007). It is also possible that people using alcohol and

cannabis maintain a reasonable capacity to function and perform daily tasks despite using considerable amounts of cannabis and alcohol. The literature indicates that the depressant psychoactive properties of cannabis and alcohol promotes a general numbing and slowing of the central nervous system, which is different from the majority of the other illicit drugs which are predominately characterised by altered perceptions of reality and stimulation of the nervous system (Psychosocial Guidelines, NSW Health, 2008). If, as may often be the case in community treatment, clients attend sessions under the influence of cannabis and alcohol, it is reasonable to presume that they would not interpret their relationship with their counsellor or their own motivation for treatment as extreme, either positively or negatively, as their capacity for reflection and accurate evaluation of these constructs may be blunted.

Motivation and therapeutic alliance

This study, unlike many others, examined the relationship between measures of motivation and therapeutic alliance with the aim of better understanding the complex nature and dynamics of these constructs in clients attending community drug and alcohol treatment. Our hypothesis that high external motivation would be associated with lower therapeutic alliance at treatment entry was only partially supported. A significant, negative correlation was found between external motivation and bond and openness as hypothesised. Interestingly, a significant positive relationship was found between client initiative and external motivation, and no significant associations were evident for partnership and confidence in therapist. One possible explanation for these findings is related to our examination of facets of therapeutic alliance and motivation rather than the concepts of alliance and motivation more generally. Our results then, add an interesting insight into the interactions of components of these concepts and assist in developing a comprehensive understanding of these complex phenomena.

Clients who reported high initiative in treatment also reported significantly higher external motivation and help seeking and lower intrinsic motivation than those who reported low initiative. This supports past research (Cahill et al. 2003) suggesting that external motivation has a significant role in treatment, due partly to the desire to minimise negative consequences, and thus perhaps a greater desire to receive help.

Clients reporting high therapeutic bond at baseline reported significantly higher internal motivation and significantly lower external motivation and help seeking at the same timepoint. Similarly, higher perception of partnership with the therapist was related to significantly higher reported internal motivation and lower help seeking, although confidence in treatment was not significantly associated with subjective ratings of partnership. These results suggest that those clients who are intrinsically motivated to attend treatment are perhaps more receptive to a positive relationship with the therapist and components of alliance, whereas the development and identification of these variables are less important in clients experiencing high levels of external pressure to attend treatment. This may relate to how actively psychologically and cognitively the individual is engaged in therapy, which plays a significant role in effective client treatment and their engagement in the therapeutic process (Rosen, 2004). As would be expected, higher confidence in treatment was associated with higher help seeking, suggesting that those who perceive psychological treatment as somewhat beneficial to helping them manage and achieve their substance use goals, are more likely to have a desire to seek treatment. Interestingly, our results also reveal a significant relationship between openness and motivation for treatment, with those reporting high internal motivation reporting significantly higher levels of openness than those with high extrinsic motivation. This is again supported in the literature (Norcross,

2010) and suggests that internally motivated clients are more receptive to information sharing and engaging interpersonally with their clinician. It makes sense, then, that clients motivated to engage in treatment by external influences may be more reserved and less open with the clinician as their goals, purpose and motivation for attending therapy are still developing.

Predictor relationships between age, substance use, coercion and facets of motivation and therapeutic alliance

Contrary to our hypothesis that external motivation and therapeutic alliance would be related to significantly better substance use outcomes in coerced compared to non-coerced clients, no significant predictor relationships were found for cannabis, alcohol, tobacco, heroin, other opiates, methamphetamines, cocaine, barbiturates, tranquilisers, hallucinogens or inhalants at 15 week follow up. These results seem to indicate that coercion has a minimal role in the effectiveness of intervention for substance use in this sample. However, given the wide spread use of motivational interviewing within the drug and alcohol field particularly within NSW health in accordance with the Psychosocial Guidelines (NSW Health, 2008) perhaps the effects of coercion were minimised and addressed early in therapy. Further research is needed to assess if the modality of therapy and interventions used inhibits potentially negative effects of coercion.

Similarly, treatment motivation and therapeutic alliance at baseline did not predict treatment outcomes at 15 weeks which may be explained by the small sample size in our study and insufficient power to detect these relationships given the vast literature indicating that these factors play a significant role in successful treatment outcomes.

Overall, the lack of predictor relationships perhaps points to what is most

important in working with complex drug and alcohol clients; thorough assessment and treatment of the individual and the specific issues that they bring to therapy. It is a reminder for clinicians to avoid generalisations and judgements about client's likelihood for positive treatment outcomes based on referral source, substance use, attitude and initial engagement in therapy. These results emphasise the need to be empathic and meet the clients where they are at when they attend treatment. Differentiation of clients and treatment based on these non-predictive variables is questionable and may undermine the potential benefits of a therapy process that allows for individual difference, and the complex dynamics and interaction between substance use, coercion, motivation and therapeutic alliance.

Limitations of the study

A significant, although not entirely unexpected, limitation of the current study is the poor statistical power due to relatively small numbers of participants within each group. This is a common problem faced by researchers especially when using participants from a real-world community based drug and alcohol sample as in this study. Of those referred to the study, 46% consented and completed the assessment information and only 36% of those also completed the follow up questionnaires (however, we had 60% retention of clients at 15 weeks who completed the baseline assessment associated with the study, which is the standard in this field of research). Difficulty in engaging and retaining drug and alcohol clients in research is not uncommon and has similarly been found elsewhere (Simpson, Joe & Rowan-Szal, 1997). Existing research in substance abuse and coercion tends to utilise captive populations of clients such as residential treatment and prisons. As such, our retention rates for our community based sample are less than would be expected in inpatient settings.

Potential clients were asked for preliminary consent to pass their contact details to the research assistant by their treating clinician (see Kay-Lambkin et al. 2012, for more detail). Although clinicians did not know who was participating in the research, it is possible that a selection bias, where clinicians excluded or included particular clients based on some subjective criteria that was not accounted for in this study. However, we attempted to overcome this by instructing clinicians to refer all clients to the study unless they felt that discussing research interfered with client's safety and progress in therapy, in which case this could be addressed at a later, more appropriate time. Similarly, by maintaining the confidentiality of client's participation, assigning responsibility for consent to the research assistant, we aimed to remove clinician bias and potential impartiality based on client inclusion into the research project.

The absence of exclusion criterion may have contributed to the complexity of examining the relationships between substance use, coercion, motivation and therapeutic alliance. However, the goal of the current study was to understand the complexity of these constructs in a real world, typically chaotic and crisis driven cohort of treatment seeking individuals. The high rate of mental health co-morbidity in drug and alcohol clients, specifically anxiety, stress and depression, in this sample has been explored to some degree elsewhere (Healey et. al. *in submission*). This research therefore adds to an interesting and largely overlooked perspective within this sample of clients presenting with complex psychosocial issues.

An important methodological shortcoming within this study relates to the delay between clients referral to the service, their subsequent commencement of treatment and contact for participation in the study. Although delays were minimised wherever possible, with researchers contacting clients on the counselling waiting list, delays were unavoidable as the process of consent required participants to be mailed the forms and

there were further delays in getting them returned. However, maintaining the confidentiality of clients and their decision whether to participate or not was a paramount consideration. Pragmatically, phone contact with drug and alcohol clients to discuss the project and gauge their interest in participating was a challenge. A client group with high levels of financial difficulty and debt, legal involvement and interaction with coercive services such as Probation and Parole and DoCS, results in client's reluctance to accept phone calls from contacts not programmed into their phone. A proportion of clients were no longer in therapy at the time of contact for participation and others had been incarcerated before the baseline or follow up data could be gathered.

Given the proportion of clients within the drug and alcohol service referred by DoCS and Probation and Parole, it may be that clients intentionally under-reported their substance use for fear of negative consequences from these organisations. Clients who have a history with these agencies may be aware of the potential for clinical notes to be subpoenaed which is likely to influence their accuracy in disclosing information to their therapist and the research team.

The NSW Central Coast is an area with significant rates of domestic violence, abuse and neglect of children which as they age, inevitably results in a traumatised population of adults. These factors increase the likelihood of developing drug and alcohol problems later in life (Marsh & Dale, 2006). As with any study, the generalisability of these results to wider populations must be done so with caution. Nonetheless this study has made important contributions to the understanding of coercion, alliance and motivation on substance use in community based drug and alcohol clients.

Future research

Research consistently indicates that indigenous Australians are significantly over represented in both the drug and alcohol services and the legal system (Marsh & Dale, 2006). Despite this, only one person in our sample identified as being of Aboriginal descent. This highlights a gap in the understanding of the dynamics of coercion, motivation and therapeutic alliance in the substance using Aboriginal and Torres Strait Islander populations. Further research is crucial in this area to identify the specific needs of indigenous Australians to develop and implement targeted intervention and effectively address the significant, detrimental effects of drug and alcohol use in this population.

It seems from our study that clients using illicit substances such as heroin, tranquilisers and cocaine may perceive motivation and therapeutic alliance differently from those using cannabis, tobacco and alcohol. Research further investigating the difference in drug profiles on the interaction and relationship of coercion, motivation and therapeutic alliance would be beneficial, particularly due to the limited power of the current study. The current study did not measure ecstasy use and further research targeting the interaction of this drug with motivation would add to the literature and findings reported in this study.

Given that we found a significant relationship between age and coercion, as did Rosen et al. (2004), it is important to recognise the difference in conceptualisation of coercion and the usefulness or detrimental impact that this may have in the effectiveness of therapy with younger clients. Of particular interest may be substance using and/or offending youth, who are typically very difficult to engage and maintain in treatment.

It seems that enforcing and engaging clients in treatment (coercion and therapeutic alliance) both play a significant role in drug and alcohol treatment. With

high levels of substance use in Australia, continued vigilance is necessary to understand the complex dynamics that contribute to treatment initiation and successful intervention with substance using clients.

Manuscript References

Ackerman, S. J., & Hilsenroth, M. J. (2003). A review of therapist characteristics and techniques positively impacting on the therapeutic alliance. *Clinical Psychological Review, 23*, 1-33.

Agnew-Davies, R., Stiles, W. B., Hardy, G. E., Barkham, M. & Shapiro, D. A. (1998).

Alliance structure assessed by the Agnew Relationship Measure (ARM). *British Journal of Clinical Psychology, 37*, 155-172.

AIHW (Australian Institute of Health and Welfare) (2008). *2007 National Drug Strategy Household Survey: first results*. Drug statistics series no. 20. Cat no. PHE 98. Canberra: AIHW.

Barrowclough, C., Meier, P., Beardmore, R., & Emsley, R. (2010). Predicting therapeutic alliance in clients with psychosis and substance misuse. *Journal of Nervous and Mental Disease, 198*(5), 373-377.

Cahill, M. A., Adinoff, B., Hosig, H., Muller, K., & Pulliam, C. (2003). Motivation for treatment preceding and following a substance abuse program. *Addictive Behaviours, 28*, 67-79.

Carey, K. B., Purnine, D. M., Maisto, A., & Carey, M. P. (2006). Assessing readiness to change substance abuse: a review of instruments. *Clinical Psychology: Science and Practice, 6*(3), 245-266.

Center for Substance Abuse Treatment. *Clinical Supervision and Professional Development of the Substance Abuse Counselor*. Treatment Improvement Protocol (TIP) Series 52. DHHS Publication No. (SMA) 09-4435. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2009.

Connors, G. J., DiClemente, C. C., Demen, K. H., Carroll, R., & Frone, M. R. (2000). Predicting the therapeutic alliance in alcoholism treatment. *Journal of Studies on Alcohol, 61*(1), 139-149.

Darke, S., Ward, J., Hall, W., Heather, N., & Wodak, A. (1991). *The Opiate Treatment Index (OTI) Researcher's Manual*. National Drug and Alcohol Research Centre Technical Report Number 11. Sydney, National Drug and Alcohol Research Centre.

DiClemente, C. C., Nidecker, M., & Bellack, A. S. (2008). Motivations and the stages of change among individuals with severe mental illness and substance use disorders. *Journal of Substance Abuse Treatment, 34*, 25-35.

Dynon, K. (2006). Alcohol counselling treatment factors relating to service provision and outcome in a community health setting. © University of Newcastle Australia.

- Farabee, D., Nelson, R., & Spence, R. (1993). Psychosocial profiles of criminal justice and noncriminal justice referred substance abusers in treatment. *Criminal Justice and Behaviour*, 20, 336-346.
- Farabee, D., Prendergast, M., & Anglin, M. D. (1998). The effectiveness of coerced treatment for drug-abusing offenders. *Federal Probation*, 62, 3-10.
- Goodman, I., Peterson-Badali., & Henderson, J. (2011). Understanding motivation for substance abuse treatment: the role of social pressure during the transition to adulthood. *Addictive Behaviors*, 36, 660-668.
- Gregoire, T. K., & Burke, A. C. (2004). The relationship of legal coercion to readiness to change among adults with alcohol and other drug problems. *Journal of Substance Abuse Treatment*, 26, 35-41.
- Kay-Lambkin, F.J., Baker, A.L., Healey, A., Wolfe, S., Simpson, A., Brooks, M., Bowman, J. & Childs, S. (in submission). Study protocol: a dissemination trial of computerized psychological treatment for depression and alcohol/other drug use comorbidity in an Australian Clinical Service. *BMC Psychiatry*.
- Kelly, J. F., Finney, J. W., & Moos, R. (2005). Substance use disorder patients who are mandated to treatment: characteristics, treatment process and 1 year and 5 year outcomes. *Journal of Substance Abuse treatment*, 28, 213- 223.
- Hiller, M. L., Knight, K, Leukefeld, C., & Simpson, D. D. (2002). Motivation as a predictor of therapeutic engagement in mandated residential substance abuse treatment. *Criminal Justice and Behavior*, 29(1), 56-75.
- Hovarth, A. O., & Luborsky, L. (1993). The role of therapeutic alliance in psychotherapy. *Journal of Consulting and Clinical Psychology*, 61(4), 561-573.
- Hovarth, A. O., & Symonds, B. D. (1991). Relation between working alliance and outcome in psychotherapy: a meta-analysis. *Journal of Counselling Psychology*, 38, 139-149.
- Klag, S., O'Callaghan, F., & Creed, P. (2005). The use of legal coercion in treatment of substance abusers: an overview and critical analysis of thirty years of research. *Substance Use and Misuse*, 40, 1777-1795.
- Longshore, D., & Teruya, C. (2006). Treatment motivation in drug users: a theory based analysis. *Drug and alcohol Dependence*, 81, 179-188.
- Mackain, S. J., & Lecci, L. (2010). Perceived coercion in substance abuse treatment: the eye of the beholder?. *Journal of Substance Use*, 15(1), 24-30.
- Macneil, C, Hasty, M. K., Evans., Redlich, C., & Berk, C. (2009). The therapeutic alliance: is it necessary or sufficient to engender positive outcomes. *Acta Neuropsychiatrica*, 21(2), 95-98.
- Marlowe, D. B., Merikle, E. P., Kirby, K., Festinger, D. S., & McLellan, T. (2001). Multidimensional assessment of perceived treatment entry pressures among substance users. *Psychology of Addictive Behaviors*, 15(2), 97-108.

Marsh, A. & Dale, A. (2006). *Addiction Counselling: contents and process*, Melbourne: IP Communications.

Marshall, G. N., & Hser, Y. (2002). Characteristics of criminal justice and noncriminal justice clients receiving treatment for substance abuse. *Addictive Behaviours*, 27, 179-192.

Martin, D. J., Garske, J. P. & Davis, M. K. (2000). Relation of the therapeutic alliance with outcome and other variables: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, 68, 438-450.

McBride, C. M., Curry, S. J., Stephens, r. S., Wells, E. A., Roffman, R. A., & Hawkins, D. (1994). Intrinsic and extrinsic motivation for change in cigarette smokers, marijuana smokers and cocaine users. *Psychology of Addictive Behaviors*, 8(4), 243-250.

Meier, P. S., Donmall, M. C., McElduff, P., Barrowclough, C., & Heller, R. F. (2006). *Drug and Alcohol Dependence*, 83, 57-64.

Meier, P. S., Barrowclough, C., & Donmall, M. C. (2005). The role of therapeutic alliance in the treatment of substance misuse: a critical review of the literature. *Addiction*, 100(3), 304-316.

Melnick, G., De Leon, T. G., Kressel, D., & Wexler, H. K. (2001). Treatment process in prison therapeutic communities: motivation, participation and outcome. *American Journal of Drug and Alcohol Abuse*, 27(4), 633-650.

Norcross, J. C. (2010). The therapeutic relationship. In B. Duncan, S. Miller, B. Wampold & M. Hubble (Eds.), *The heart and soul of change: Delivering what works in therapy* (2nd ed). Washington, DC: American Psychological Association.

NSW Health (2008). NSW Health Drug and Alcohol Psychosocial Interventions Professional Practice Guidelines. © NSW Department of Health 2008, SHPN (MHDAO) 070224. ISBN 978 1 74187 172 2.

Ondersma, S. J., Winhusen, T., & Lewis, D. F. (2010). External pressure, motivation and treatment outcomes among pregnant substance-using women. *Drug and Alcohol Dependence*, 107, 149-153.

Passey, M., Flaherty, B., & Didcott, P. (2006). The magistrates early referral into treatment (MERIT) pilot program: a descriptive analysis of a court diversion program in rural Australia. *Journal of Psychoactive Drugs*, 38(4), 521-529.

Polcin, D. L., Weisner, C. (1999). Factors associated with coercion in entering treatment with alcohol problems. *Drug and Alcohol Dependence*, 54(1), 63-68.

Prendergast, M., Greenwell, L., Farabee, D., & Hser, Y. (2009). Influence of perceived coercion and motivation on treatment completion and re-arrest among substance using offenders. *Journal of Behavior & Health Services Research*, 36(2), 159-176.

QCS (2010). Probation and Parole. Queensland Corrective Services, Queensland Government. Retrieved from www.correctiveservices.qld.gov.au

Rosen, P. J., Hiller, M. L., Webster, M., Staton, M., & Leukefeld, C. (2004). Treatment motivation and therapeutic engagement in prison-based substance abuse treatment. *Journal of Psychoactive Drugs*, 36(3), 387-396.

Ryan, R. M., Plant, R. W., & O'Malley, S. (1995). Initial motivations for alcohol treatment: relations with patient characteristics, treatment involvement and dropout. *Addictive behaviours*, 20(3), 279-297.

Shearer, R. A., & Ogan, G. D. (2002). Voluntary participation and treatment resistance in substance abuse treatment programs. *Journal of Offender Rehabilitation*, 34(3), 31-45.

Simpson, D. D., Joe, G. W., Rowan-Szal, G., & Greener, J. (1995). Client engagement and change during drug abuse treatment. *Journal of Substance Abuse*, 7, 117-134.

Sullivan, M. A., Birkmayer, f., Boyarsky, B. K., Frances, R. J., Fromson, J. A., Galanter, M., Levin, F. R., Lewis, C., Nace, E. P., Suchinsky, R. P., Tamerin, J. S., Tolliver, B., & Westermeyer, J. (2008). Uses of coercion in addiction treatment: clinical aspects. *The American Journal on Addictions*, 17(1), 36-47.

Tracey, T. J., & Kokotovic, A. M. (1989). Factor structure of the working alliance inventory. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, 1, 207-210.

Wild, T. C., Newton-Taylor, B., & Alletto, R. (1998). Perceived coercion among clients entering substance abuse treatment: structural and psychological determinants. *Addictive Behaviors*, 23(1), 81-95.

Wild, T. C., Roberts, A. B., & Cooper, E. L. (2002). Compulsory substance abuse treatment: an overview of recent findings and issues. *European Addiction Research*, 8, 84-93.

References

- Ackerman, S. J., & Hilsenroth, M. J. (2003). A review of therapist characteristics and techniques positively impacting on the therapeutic alliance. *Clinical Psychological Review, 23*, 1-33.
- Agnes-Davies, R., Stiles, W. B., Hardy, G. E., Barkham, M. & Shapiro, D. A. (1998). Alliance structure assessed by the Agnew Relationship Measure (ARM). *British Journal of Clinical Psychology, 37*, 155-172.
- AIHW (Australian Institute of Health and Welfare) (2008). *2007 National Drug Strategy Household Survey: first results*. Drug statistics series no. 20. Cat no. PHE 98. Canberra: AIHW.
- Akers, A. (2007). The motivation and other characteristics of clients seeking treatment from an outpatient "Cannabis Clinic". © University of Newcastle Australia.
- Barber, J. P., Connolly, M. B. et al. (2000). Alliance predicts patient outcomes beyond in-treatment change in symptoms. *Journal of consultant and Clinical Psychology, 23*(1), 1-33.
- Barrowclough, C., Meier, P., Beardmore, R., & Emsley, R. (2010). Predicting therapeutic alliance in clients with psychosis and substance misuse. *Journal of Nervous and Mental Disease, 198*(5), 373-377.
- Burke, A. C., & Gregoire, T. K. (2007). Substance abuse treatment outcomes for coerced and noncoerced clients. *Health and Social Work, 23*(1), 7-15.
- Cahill, M. A., Adinoff, B., Hosig, H., Muller, K., & Pulliam, C. (2003). Motivation for treatment preceding and following a substance abuse program. *Addictive Behaviours, 28*, 67-79.
- Carey, K. B., Purnine, D. M., Maisto, A., & Carey, M. P. (2006). Assessing readiness to change substance abuse: a review of instruments. *Clinical Psychology: Science and Practice, 6*(3), 245-266.
- Carpenter, K. M., Miele, G. M., & Hasin, D. S. (2002). Does motivation to change mediate the effect of DSM-IV substance use disorders on treatment utilization and substance use? *Addictive Behaviors, 27*, 207-225.
- Center for Substance Abuse Treatment. *Clinical Supervision and Professional Development of the Substance Abuse Counselor*. Treatment Improvement Protocol (TIP) Series 52. DHHS Publication No. (SMA) 09-4435. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2009.
- Cosden, M., Basche, J. E., Campos, E., Greenwell, A., Barazani, S., & Walker, S. (2006). Effects of motivation and problem severity on court-based drug treatment. *Crime and Delinquency, 52*(4), 599-618.
- Connors, G. J., DiClemente, C. C., Demen, K. H., Carroll, R., & Frone, M. R. (2000). Predicting the therapeutic alliance in alcoholism treatment. *Journal of Studies on Alcohol, 61*(1), 139-149.

- Darke, S., Ward, J., Hall, W., Heather, N., & Wodak, A. (1991). *The Opiate Treatment Index (OTI) Researcher's Manual. National Drug and Alcohol Research Centre Technical Report Number 11*. Sydney, National Drug and Alcohol Research Centre.
- Deci, E.L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behaviour*. New York: Plenum.
- DeLeon, G., & Jainchill, N. (1986). Circumstance, motivation, readiness and suitability as correlates of treatment tenure. *Journal of Psychoactive Drugs*, 18(3), 203-208.
- DeLeon, G., Melnick, G., & Kressel, D. (1997). Motivation and readiness for therapeutic community treatment among cocaine and other drug abusers. *American Journal of Drug and Alcohol Abuse*, 23(2), 169-189.
- DiClemente, C. C., Nidecker, M., & Bellack, A. S. (2008). Motivations and the stages of change among individuals with severe mental illness and substance use disorders. *Journal of Substance Abuse Treatment*, 34, 25-35.
- DiClemente, C. C. (1999). Motivation for change: implications for substance abuse treatment. *Psychological Science*, 10(3), 209-213.
- Dynon, K. (2006). *Alcohol counselling treatment factors relating to service provision and outcome in a community health setting*. © University of Newcastle Australia.
- Fakoury, W., White, I., & Priebe, S. (2007). PLAO study group. Be good to your patient: how the therapeutic relationship in the treatment of patients admitted to assertive outreach affects rehospitalisation. *Journal of Nervous Mental Disorders*, 195, 789-791.
- Farabee, D., Nelson, R., & Spence, R. (1993). Psychosocial profiles of criminal justice and noncriminal justice referred substance abusers in treatment. *Criminal Justice and Behaviour*, 20, 336-346.
- Farabee, D., Prendergast, M., & Anglin, M. D. (1998). The effectiveness of coerced treatment for drug-abusing offenders. *Federal Probation*, 62, 3-10.
- Fiorentine, R., Nakashima, J. & Anglin, D. (1999). Client engagement in drug treatment. *Journal of substance abuse treatment*, 17(3), 199-206.
- Goodman, I., Peterson-Badali., & Henderson, J. (2011). Understanding motivation for substance abuse treatment: the role of social pressure during the transition to adulthood. *Addictive Behaviors*, 36, 660-668.
- Gregoire, T. K., & Burke, A. C. (2004). The relationship of legal coercion to readiness to change among adults with alcohol and other drug problems. *Journal of Substance Abuse Treatment*, 26, 35-41.
- Healey, A. J., Kay-Lambkin, F. J., Baker, A., Bowman, J., & Childs, S. (in submission). Avoiding emotional bonds: an examination of the dimensions of therapeutic alliance among cannabis users compared to users of other drugs. *Psychology of Addictive Behaviors*.

Hiller, M. L., Knight, K., Broome, K. M., & Simpson, D. D. (1998). Legal pressure and treatment retention in a national sample of long term residential programs. *Criminal Justice Behaviour*, 25(4), 463-481.

Iigen, M. A., McKellar, J., Moos, R., & Finney, J. W. (2006). Therapeutic alliance and the relationship between motivation and treatment outcomes in patients with alcohol use disorder. *Journal of Substance Abuse Treatment*, 31, 157-162.

Joe, G. W., Simpson, D., & Broome (1998). Effects of readiness for drug abuse treatment on client retention and assessment of process. *Addiction*, 93(8), 1177-1190

Kay-Lambkin, F.J., Baker, A.L., Healey, A., Wolfe, S., Simpson, A., Brooks, M., Bowman, J. & Childs, S. (in submission). Study protocol: a dissemination trial of computerized psychological treatment for depression and alcohol/other drug use comorbidity in an Australian Clinical Service. *BMC Psychiatry*.

Kelly, J. F., Finney, J. W., & Moos, R. (2005). Substance use disorder patients who are mandated to treatment: characteristics, treatment process and 1 year and 5 year outcomes. *Journal of Substance Abuse treatment*, 28, 213- 223.

Klein, D., Schwartz, J. E., Santiago, N. J., Vivian, D., Vocisano, C., Castonguay, L. G., Arnow, B., Blalock, J. A., & Manber, R., et. al. (2003). Therapeutic alliance in depression treatment: controlling for prior change and treatment characteristics. *Journal of Clinical and Consulting Psychology*, 71(6), 997-1006.

Hiller, M. L., Knight, K., Leukefeld, C., & Simpson, D. D. (2002). Motivation as a predictor of therapeutic engagement in mandated residential substance abuse treatment. *Criminal Justice and Behavior*, 29(1), 56-75.

Hovarth, A. O., & Luborsky, L. (1993). The role of therapeutic alliance in psychotherapy. *Journal of Consulting and Clinical Psychology*, 61(4), 561-573.

Hovarth, A. O., & Symonds, B. D. (1991). Relation between working alliance and outcome in psychotherapy: a meta-analysis. *Journal of Counselling Psychology*, 38, 139-149.

Klag, S., O'Callaghan, F., & Creed, P. (2005). The use of legal coercion in treatment of substance abusers: an overview and critical analysis of thirty years of research. *Substance Use and Misuse*, 40, 1777-1795.

Knight, K., Hiller, M. L., Broome, K. M., & Simpson, D. D. (2000). Legal pressure, treatment readiness and engagement in long term residential programs. *Journal of Offender Rehabilitation*, 31(1), 101-115.

Longshore, D., & Teruya, C. (2006). Treatment motivation in drug users: a theory based analysis. *Drug and Alcohol Dependence*, *81*, 179-188.

Loneck, B., Garret, J., & Banks, S. A. (1996). Comparison of the Johnson intervention for four methods of referral into out-patient treatment. *American Journal of Drug and Alcohol Abuse*, *22*(2), 233-246.

Mackain, S. J., & Lecci, L. (2010). Perceived coercion in substance abuse treatment: the eye of the beholder?. *Journal of Substance Use*, *15*(1), 24-30.

Macneil, C, Hasty, M. K., Evans., Redlich, C., & Berk, C. (2009). The therapeutic alliance: is it necessary or sufficient to engender positive outcomes. *Acta Neuropsychiatrica*, *21*(2), 95-98.

Markland, D., Ryan, R., Tobin, V, J., & Rollnick, S. (2005). Motivational interviewing and self-determination theory. *Journal of Social and Clinical Psychology*, *24*(6), 811-831.

Marlowe, D. B., Merikle, E. P., Kirby, K., Festinger, D. S., & McLellan, T. (2001). Multidimensional assessment of perceived treatment entry pressures among substance users. *Psychology of Addictive Behaviors*, *15*(2), 97-108.

Marsden, J., Stewart, D., Gossop, M., Rolfé, A., Bacchus, L., & Griffiths, P. (2000). Assessing client satisfaction with treatment for substance use problems and the development of the treatment perceptions questionnaire (TPQ). *Addiction Research*, *8*, 455-470.

Marsh, A. & Dale, A. (2006). *Addiction Counselling: contents and process*, Melbourne: IP Communications.

Marshall, G. N., & Hser, Y. (2002). Characteristics of criminal justice and noncriminal justice clients receiving treatment for substance abuse. *Addictive Behaviours*, *27*, 179-192.

Martin, D. J., Garske, J. P. & Davis, M. K. (2000). Relation of the therapeutic alliance with outcome and other variables: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, *68*, 438-450.

McBride, C. M., Curry, S. J., Stephens, r. S., Wells, E. A., Roffman, R. A., & Hawkins, D. (1994). Intrinsic and extrinsic motivation for change in cigarette smokers, marijuana smokers and cocaine users. *Psychology of Addictive Behaviors*, *8*(4), 243-250.

Meier, P. S., Donmall, M. C., McElduff, P., Barrowclough, C., & Heller, R. F. (2006). *Drug and Alcohol Dependence*, *83*, 57-64.

Meier, P. S., Barrowclough, C., & Donmall, M. C. (2005). The role of therapeutic alliance in the treatment of substance misuse: a critical review of the literature. *Addiction*, *100*(3), 304-316.

- Meier, P. S. & Donmall, M. C. (2006). Differences in client and therapist views of the working alliance in drug treatment. *Journal of Substance Use, 11*(1), 73-80.
- Melnick, G., De Leon, T. G., Kressel, D., & Wexler, H. K. (2001). Treatment process in prison therapeutic communities: motivation, participation and outcome. *American Journal of Drug and Alcohol Abuse, 27*(4), 633-650.
- Miller, W. R., & Rollnick, S. (1991) *Motivational interviewing: preparing people to change addictive behaviour*. New York: Guildford.
- Myers, B. J., Pasche, S. & Adam, M. (2010). Correlates of substance abuse treatment completion among disadvantaged communities in Cape Town, South Africa. *Substance Abuse Treatment Prevention and Policy, 5*(3), 57-64.
- Norcross, J. C. (2010). The therapeutic relationship. In B. Duncan, S. Miller, B. Wampold & M. Hubble (Eds.), *The heart and soul of change: Delivering what works in therapy* (2nd ed). Washington, DC: American Psychological Association.
- NSW Health (2008). NSW Health Drug and Alcohol Psychosocial Interventions Professional Practice Guidelines. © NSW Department of Health 2008, SHPN (MHDAO) 070224. ISBN 978 1 74187 172 2.
- Ondersma, S. J., Winhusen, T., & Lewis, D. F. (2010). External pressure, motivation and treatment outcomes among pregnant substance-using women. *Drug and Alcohol Dependence, 107*, 149-153.
- Passey, M., Flaherty, B., & Didcott, P. (2006). The magistrates early referral into treatment (MERIT) pilot program: a descriptive analysis of a court diversion program in rural Australia. *Journal of Psychoactive Drugs, 38*(4), 521-529.
- Polcin, D. L., Weisner, C. (1999). Factors associated with coercion in entering treatment with alcohol problems. *Drug and Alcohol Dependence, 54*(1), 63-68.
- Prendergast, M., Greenwell, L., Farabee, D., & Hser, Y. (2009). Influence of perceived coercion and motivation on treatment completion and re-arrest among substance using offenders. *Journal of Behavior & Health Services Research, 36*(2), 159-176.
- Prochaska, J. O., & DiClemente, C. C. (1986). Toward a comprehensive model of change. In W. Miller & N. Heather (Eds.), *Treating addictive behaviors: Process of change*. New York: Plenum.
- QCS (2010). Probation and Parole. Queensland Corrective Services, Queensland Government. Retrieved from www.correctiveservices.qld.gov.au
- Rosen, P. J., Hiller, M. L., Webster, M., Staton, M., & Leukefeld, C. (2004). Treatment motivation and therapeutic engagement in prison-based substance abuse treatment. *Journal of Psychoactive Drugs, 36*(3), 387-396.
- Ryan, R. M., & Deci, E. L. (2006). Self-regulation and the problem of human autonomy: does psychology need choice, self-determination and will?. *Journal of Personality, 74*(6), 1558-1585.

- Ryan, R. M., Plant, R. W., & O'Malley, S. (1995). Initial motivations for alcohol treatment: relations with patient characteristics, treatment involvement and dropout. *Addictive behaviours*, 20(3), 279-297.
- Seddon, T. (2007). Coerced drug treatment in the criminal justice system: conceptual, ethical and criminological issues. *Criminology and Criminal Justice*, 7, 269-286.
- Shearer, R. A., & Ogan, G. D. (2002). Voluntary participation and treatment resistance in substance abuse treatment programs. *Journal of Offender Rehabilitation*, 34(3), 31-45.
- Simpson, D. D., Joe, G. W., Rowan-Szal, G., & Greener, J. (1995). Client engagement and change during drug abuse treatment. *Journal of Substance Abuse*, 7, 117-134.
- Stark, M. J. (1992). Dropping out of substance abuse treatment: a clinically orientated review. *Clinical Psychology Review*, 12, 93-116.
- Strauss, J. L., & Johnson, S. L. (2006). Role of treatment alliance in the management of bipolar disorder: stronger alliances prospectively predict fewer manic symptoms. *Psychiatry Research*, 145, 215-233.
- Sullivan, M. A., Birkmayer, f., Boyarsky, B. K., Frances, R. J., Fromson, J. A., Galanter, M., Levin, F. R., Lewis, C., Nace, E. P., Suchinsky, R. P., Tamerin, J. S., Tolliver, B., & Westermeyer, J. (2008). Uses of coercion in addiction treatment: clinical aspects. *The American Journal on Addictions*, 17(1), 36-47.
- Thornton, L., Baker, A.L., Lewin, T.J., Kay-Lambkin, F.J., Kavanagh, D., Richmond, R., Kelly, B. & Johnson, M.P. (in press). Reasons for substance use among people with mental disorders. *Addictive Behaviors*.
- Tracey, T. J., & Kokotovic, A. M. (1989). Factor structure of the working alliance inventory. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, 1, 207-210.
- Wild, T. C., Cunningham, J. A., & Ryan, R. m. (2006). Social pressure, coercion, and client engagement at treatment entry: a self-determination theory perspective. *Addictive Behaviors*, 31, 1858-1872
- Wild, T. C., Newton-Taylor, B., & Alletto, R. (1998). Perceived coercion among clients entering substance abuse treatment: structural and psychological determinants. *Addictive Behaviors*, 23(1), 81-95.
- Wild, T. C., Roberts, A. B., & Cooper, E. L. (2002). Compulsory substance abuse treatment: an overview of recent findings and issues. *European Addiction Research*, 8, 84-93.

8. APPENDICES

Appendix A:

Client Information Sheet



Area Drug & Alcohol Service
Central Coast Counselling / MERIT Teams

Centre for Brain & Mental
Health Research

NORTHERN SYDNEY CENTRAL COAST HEALTH HUMAN RESEARCH ETHICS COMMITTEE

Information Statement – Client

For the Research Project:

Integrated multimedia psychosocial treatment for co-existing substance use, depression, and anxiety within a stepped-care framework: A feasibility pilot study of treatment outcomes.

Researchers: Dr Frances Kay-Lambkin, A/Prof Jenny Bowman, Dr Andrew Baillie, Mr Aaron Simpson, Ms Mary Joy, Ms Alison Healey, Ms Samantha Wolfe, Ms Michelle Brooks and Mr Steve Childs

You are invited to take part in the research project identified above. The research is a part requirement of the degree of Doctorate of Clinical Psychology being undertaken by Mr Aaron Simpson, Ms Michelle Brooks and Ms Samantha Wolfe at the University of Newcastle, a Masters of Psychology (Clinical) at the University of Newcastle undertaken by Ms Alison Healey, and a Masters of Psychology (Clinical) at Macquarie University undertaken by Ms Mary Joy. These students are under the supervision of Dr Frances Kay-Lambkin from the Centre for Brain and Mental Health Research, A/Prof Jenny Bowman from the University of Newcastle and Dr Andrew Baillie at Macquarie University. You are being asked to participate in this study because you have recently commenced assessment and treatment services through the North Sydney Central Coast Area Health Service (NSCCAHS) – Area Drug and Alcohol Service, Central Coast Counselling Team. Mr Steve Childs from the North Sydney Central Coast Area Health Service (NSCCAHS) – Area Drug and Alcohol Service is also a researcher on this project.

Why is this research being done? – Traditionally, both drug & alcohol and mental health treatments have been conducted face-to-face. With the advent of new technology, evidenced-based computer-delivered treatments for mental health and drug & alcohol problems are now also available. The purpose of this project is to investigate people's experience of combining both computer-delivered treatments with traditional face-to-face treatments for both drug & alcohol and mental health problems.

Even if you are not interested in computers or computer-delivered treatments we would still like you to participate in the study.

If you agree to participate in the study – Consenting participants would still have an assessment with their Drug & Alcohol Counsellor as normal. Consenting participants will be asked to complete an initial assessment with a researcher focusing on a range of topics including, mental health history, drug & alcohol use (past and current), and quality of life. In addition to this, participants will be asked to provide information about their thoughts on computer-delivered treatments for drug & alcohol and/or mental health problems. Participants will also be asked about their access to, and current use of, computers.

For all consenting participants, counselling staff will complete a session-by-session checklist. This checklist will summarise the content of each session participants receive as part of their treatment through the NSCCAHS – Area Drug and Alcohol Service,

Central Coast Counselling Team. This checklist will focus on when and how face-to-face and/or computer-delivered treatments are used during each session you receive.

Three-months after their initial assessment consenting participants will be asked to complete a follow-up assessment measuring their current mental health status and drug & alcohol use. In addition, participants will be asked about their perceptions and experience of computer-delivered treatments for drug & alcohol and mental health problems.

At the completion of both the initial assessment and 3-month follow-up assessments participants will be offered reimbursement for their expenses in completing these assessments. All participants will receive up to \$20 as recompense for travel and other costs associated with participating in the study for each of these assessments.

What are your choices? - Participation in this research project is entirely your choice. Only those who give their informed consent will be included in the project. Whether or not you decide to participate, your decision will not disadvantage you in any way and will not effect the treatment you receive from the NSCCAHS – Area Drug and Alcohol Service, Central Coast Counselling Team. If you do decide to participate, you may withdraw from the project at any time without giving a reason and you have the option of withdrawing all data relating to you. Participants will also be free to withdraw any of their data, without question, at any stage throughout the study period, and up until 2 weeks following their final face-to-face assessment. After this time, all identifying markers will be permanently destroyed leaving unidentifiable data.

What are the risks and benefits of participating?- There are few risks associated with the study, but should you become distressed while completing any questionnaires or when using computer-delivered treatment an appointment with your Drug & Alcohol Counsellor can be made available for you. A possible benefit of combining computer- delivered and face-to-face treatments for drug & alcohol and/or mental health problems is that you may gain a better understanding and management of your presenting problems.

Irrespective of your decision to participate in this study or not, all clients receive the same treatment from the NSCCAHS – Area Drug and Alcohol Service, Central Coast Counselling Team.

Information provided by you for the study will have your name replaced by a code number and will be securely stored in the office of the chief investigator. Only the researchers listed on this sheet will have access to your information. As Ms Wolfe, Ms Healey and Mr Childs are an employees of the NSCCAHS – Area Drug and Alcohol Service, their access to research data will be restricted to aggregate and de-identified data only.

Information collected in this study may be presented at mental health and drug & alcohol treatment related conferences, and published in professional journals. The students involved in this project, as identified above, will write up the summarised results in a research report (thesis). Individual participants will not be identified in any reports arising from the project. Feedback about the study will be made available to you at the end of the study if you request it. Study results will not be reported on an individual basis. All data acquired as part of this project will be de-identified and securely stored for a minimum of 15-years. During this time it is possible that this data may be used for further evaluation by the research team.

What do you need to do to participate? - Please read this Information Statement and be sure you understand its contents before you consent to participate. If there is anything you do not understand, or you have questions, ask your Drug & Alcohol Counsellor or a researcher. If you would like to participate, please complete the attached Consent Form.

Please be assured that all information you provide as part of this project will remain confidential subject to any disclosure requirements established by law and departmental policy.

Your Drug & Alcohol Counsellor who explains this information to you will answer any questions you have about the research project and will give you a copy of this Information Statement to take with you. If you wish, you are free to consult with your own nominated treating doctor before agreeing to participate in the study. If you would like to ask any questions that arise during the research study please contact:

Dr Frances Kay-Lambkin on 4033 5690 or by email at
Frances.Kay-Lambkin@newcastle.edu.au

Complaints about the Study

General (ethics related) information about the research study may be obtained from the Deputy Chair of the Northern Sydney Central Coast Health Human Research Ethics Committee, Telephone: 02 9926 8106, Fax: 02 9926 6179.

Should you have any concerns or you are unhappy with the conduct of this trial and do not feel comfortable contacting the research staff, you may contact the Complaints Manager/Patient Representative (Central Coast Health) who is an independent person within the Health Service on 4320 3920. If you do need to contact the Complaints Manager/Patient Representative, please have this form handy so you may readily quote the Protocol Number and Title of the Project to this person.

The ethical aspects of this project have also been approved by:

(a) The University of Newcastle, Human Research Ethics Committee, Approval No. H-2008-0271, and as additional complaints procedures are available to you. Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone (02) 49216333, email Human-Ethics@newcastle.edu.au.

(b) Macquarie University Ethics Review Committee (Human Research). If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Research Ethics Officer (telephone [02] 9850 7854, fax [02] 9850 8799, email: ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

Appendix B:

Clinician Information Sheet



Area Drug & Alcohol Service
Central Coast Counselling / MERIT Teams

Centre for Brain & Mental
Health Research

NORTHERN SYDNEY CENTRAL COAST HEALTH HUMAN RESEARCH ETHICS COMMITTEE

Information Statement – Clinician

For the Research Project:

Integrated multimedia psychosocial treatment for co-existing substance use, depression, and anxiety within a stepped-care framework: A feasibility pilot study of treatment outcomes.

Researchers: Dr Frances Kay-Lambkin, A/Prof Jenny Bowman, Dr Andrew Baillie, Mr Aaron Simpson, Ms Mary Joy, Ms Alison Healey, Ms Samantha Wolfe, Ms Michelle Brooks and Mr Steve Childs

You are invited to take part in the research project identified above. The research is a part requirement of the degree of Doctorate of Clinical Psychology being undertaken by Mr Aaron Simpson, Ms Michelle Brooks and Ms Samantha Wolfe at the University of Newcastle, a Masters of Psychology (Clinical) undertaken by Ms Alison Healey at the University of Newcastle, and a Masters of Psychology (Clinical) undertaken by Ms Mary Joy at Macquarie University. These projects are under the supervision of Dr Frances Kay-Lambkin from the Centre for Brain and Mental Health Research, A/Prof Jenny Bowman from the University of Newcastle and Dr Andrew Baillie from Macquarie University. You are being asked to participate in this study because you are a member of the clinical staff at North Sydney Central Coast Area Health Service (NSCCAHS) – Area Drug & Alcohol Service, Central Coast Counselling Team. Mr Steve Childs from the North Sydney Central Coast Area Health Service (NSCCAHS) – Area Drug and Alcohol Service is also a researcher on this project

Why is this research being done? – As clinicians you provide a range of psychosocial interventions to people seeking assistance with modifying problematic drug and alcohol use. Both community and clinical samples have indicated that co-existing substance use disorders and mental health problems are highly prevalent. Supplementing face-to-face treatments with computer-delivered treatments may help people with substance use disorders and/or mental health problems to address the many barriers encountered in accessing treatments matched to their unique and complex set of needs.

The proposed project will pilot test the implementation of a computer-delivered treatment program namely, Self-Help for Alcohol/other drug use and Depression (SHADE), and other available evidence-based multimedia packages from both a clinician and client perspective. This project will endeavour to monitor how and why clinicians integrate SHADE and other multimedia packages into their clinical practice, identify challenges/barriers to multimedia diffusion, and monitor the outcomes associated with the integration of computer-delivered treatment.

If you agree to participate in the study – Initially, you will be asked to participate in a formal focus-group aimed at identifying a number of issues related to the implementation of computer-delivered treatment into clinical practice.

This includes, training/supervision requirements, practical or resource issues involved in implementing and conducting SHADE computer-delivered therapy, as well as current use of other multimedia treatments within the clinical context. Participating clinicians will

also be invited to participate in a one-on-one interview with the researcher to collect a range of qualitative data, covering similar issues.

Throughout the implementation trial, participating clinical staff will also be asked to complete a session-by-session checklist summarising the content of their assessment and treatment sessions provided to those clients. This checklist will focus on if, when, and how computer-delivered treatments are utilised during each treatment session for participating clinicians. Completed checklists will be collated by the student researcher and at no time will this form be made available to any of your colleagues or supervisors. Further, all sessional checklist data will be analysed and reported as an aggregate.

At the conclusion of the 6-month implementation phase, clinical staff will also be asked to participate in a follow-up focus-group and one-on-one interview aimed at elucidating their perception and experience of utilising multimedia packages as an adjunct to their clinical interventions, and their preparedness to continue to incorporate these approaches in the future. It is estimated that the focus groups and one-on-one interviews will be of approximately 1-hour duration each.

We would like to ask for your permission to audiotape the focus-group and one-on-one interview sessions you are involved in as part of this project. Audiotapes will be marked with an identification number only, along with the initials of the researchers completing the sessions, and the date of the focus-group or one-on-one interview session. No personal details about you will be associated with the labelling of these audiotapes. All audiotapes will be stored in a locked storage cabinet that is only accessible by the research team. All audio tapes will be erased immediately after a written transcript of the focus-group or one-on-one interview is finalised. Within the written transcript all identifiers will be replaced with a code. Please note that you are under no obligation to consent to the audiotaping of either the focus-group or one-on-one interview sessions. Further, you may participate in the study without having your contribution being audiotaped.

Please take note of item 4 on the Consent Form attached to this information sheet, asks you to specifically consent to the audiotaping of the focus-group and one-on-one interview sessions. You can do this by ticking either "Yes" or "No" at *item 4*.

If you do agree to have the focus-group and/or one-on-one interview sessions audiotaped, the researcher conducting the interview will give you the opportunity to revise this decision prior to concluding each session. You are also free to stop and edit the audiotape at any time. In addition, at the conclusion of each focus-group and/or one-on-one interview session, you will be given the opportunity to review the audiotape, and make any deletions you feel are necessary. At this time, you are also able to withdraw your consent for audiotaping, either entirely or just for that particular session.

As a clinician you are welcome to participate in any aspect of this project including, the session-by-checklist, focus-group, and/or one-on-one interview sessions, without consenting to participate in this research project. In this case, any information that you provide will not be included into the data utilised as part of this project.

What are your choices? - Participation in this research is entirely voluntary. Only those members of the clinical staff who provide informed consent will be included in the project. Whether or not you decide to participate in the research, your decision will not disadvantage you in any way. If you do decide to participate, you may withdraw from the project at any time without giving a reason and you have the option of withdrawing all data relating to you. Participants will also be free to withdraw any of their data, without question, at any stage throughout the study period, and up until 2 weeks following their final face-to-face assessment. After this time, all identifying markers will be permanently destroyed leaving unidentifiable data.

What are the risks and benefits of participating? - There are few risks associated with the study. Hopefully this project will expand your clinical repertoire for treating clients with co-existing mental health and drug & alcohol problems. Should you become distressed or have any questions while participating in this study you are encouraged to consult immediately with either your direct supervisor and/or a member of the research team.

Information provided by you for the study will have your name replaced by a code number and will be securely stored in the office of the chief investigator (Dr Kay- Lambkin). Only the researchers listed on this sheet will have access to your information. As Ms Wolfe, Ms Healey and Mr Childs are employees of the NSCCAHS – Area Drug and Alcohol Service, their access to research data will be restricted to aggregate and de- identified data only. Please be assured that none of your colleagues or supervisors will view any information you provide as part of this project, and will not know whether or not you decide to participate in the study. Moreover, all data will be reported as an aggregate.

Information collected in this study may be presented at mental health and drug & alcohol treatment related conferences, and published in professional journals. The students involved in this study (as identified above) will also report summarised, group data as part of their final research report (thesis). Individual Clinicians will not be identified in any reports arising from the project. Feedback about the study will be made available to you at the end of the study if you request it. All data acquired as part of this project will be de-identified and securely stored for a minimum of 15-years. During this time it is possible that this data may be used for further evaluation by the research team.

What do you need to do to participate? - **Please read this Information Statement and be sure you understand its contents before you consent to participate.** If there is anything you do not understand, or you have questions, please ask your direct supervisor or a member of the research team. If you would like to participate, please complete the attached Consent Form.

Please be assured that all information you provide as part of this project will remain confidential subject to any disclosure requirements established by law and departmental policy.

If you wish, you are free to seek and obtain any advice you may require before agreeing to participate in the study. If you would like to ask any questions that arise during the research study please contact either: Dr Frances Kay-Lambkin on 4033 5690 or by email at Frances.Kay-Lambkin@newcastle.edu.au

Complaints about the Study

General (ethics related) information about the research study may be obtained from the Deputy Chair of the Northern Sydney Central Coast Health Human Research Ethics Committee, Telephone: 02 9926 8106, Fax: 02 9926 6179.

Should you have any concerns or you are unhappy with the conduct of this trial and do not feel comfortable contacting the research staff, you may contact the Complaints Manager/Patient Representative (Central Coast Health) who is an independent person within the Health Service on 4320 3920. If you do need to contact the Complaints Manager/Patient Representative, please have this form handy so you may readily quote the Protocol Number and Title of the Project to this person.

The ethical aspects of this project have also been approved by:

(c) The University of Newcastle, Human Research Ethics Committee, Approval No. H-2008-0094, and as additional complaints procedures are available to you. Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone (02) 49216333, email Human-Ethics@newcastle.edu.au.

(d) Macquarie University Ethics Review Committee (Human Research). If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Research Ethics Officer (telephone [02] 9850 7854, fax [02] 9850 8799, email: ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

Appendix C:

Client Consent Form



Area Drug & Alcohol Service
Central Coast Counselling / MERIT Teams

Centre for Brain & Mental
Health Research

Consent Form – Client

1. I have read (or have had read to me) and understand all the information describing this study in the attached information sheet. I understand the nature, purpose and possible consequences and that I can leave the study at any time. All my questions have been answered to me satisfaction. I voluntarily consent to participate in this study and acknowledge that I have received a copy of this agreement and information sheet.

2. It has been explained to me that the research project will be carried out according to the principles in the National Statement on Ethical Conduct in Research Involving Humans (1999) and has been approved by both The University of Newcastle - Human Research Ethics Committee and the NSCCH Coast - Human Research Ethics Committee.

3. I consent to undergo the procedures described in the information sheet as necessary for participation in the research project.

4. I give permission for my contact details and medical record number to be provided by the NSCCH – Area Drug and Alcohol Service, Central Coast Counselling Team, to the research team.

5. I give permission for my clinician to complete a session-by-session checklist outlining the type of intervention(s) namely, face-to-face and/or computer-delivered psychotherapy; I receive each session during this project. I understand that this is only for the purpose of identifying the amount and type of intervention I receive during each session (i.e. face-to-face and/or computer-delivered intervention). Further, I understand that no other personal information will be included in the session checklist.

Yes No

6. I would like a copy of the study's results sent to me when available

Yes No

7. I give permission for de-identified data I provide as part of my participation in this project to be used by other research students working with the research team at the Centre for Brain & Mental Health Research, University of Newcastle.

Yes No

I have been assured that the answers to the survey questions will remain confidential subject to any disclosure requirements established by law and departmental policy.

Research Project Title: **Integrated multimedia psychosocial treatment for co-existing substance use, depression, and anxiety within a stepped care framework: A feasibility pilot study of treatment outcomes.**

Participant signature: _____ **Age:** _____

Date: _____

I have given a verbal explanation of the research project, its procedures and risks and I believe the participant has understood that explanation

Researcher signature: _____

Date: _____

Prepared September 1998 - amended March 2005
By the Clinical Drug Trials Sub-Committee

Appendix D:

Clinician Consent Form

Consent Form – Clinician

1. I have read (or have had read to me) and understand all the information describing this study in the attached information sheet. I understand the nature, purpose and possible consequences and that I can leave the study at any time. All my questions have been answered to me satisfaction. I voluntarily consent to participate in this study and acknowledge that I have received a copy of this agreement and information sheet.

2. It has been explained to me that the research project will be carried out according to the principles in the National Statement on Ethical Conduct in Research Involving Humans (1999) and has been approved by both The University of Newcastle - Human Research Ethics Committee and the NSCCH Coast - Human Research Ethics Committee.

3. I consent to undergo and participate in the procedures described in the information sheet as necessary for participation in the research project.

4. I give permission for my contribution in the baseline and follow-up focus-group sessions to be audio taped. I understand that this is only for the purpose of establishing a written transcript of the focus-group. Within the written transcript all identifiers will be replaced with a code. I understand that audiotapes will not contain my name or any other identifying information that links the audiotape to me.

Yes No

5. I give permission for my contribution in the baseline and follow-up one-on-one interview sessions to be audio taped. I understand that this is only for the purpose of establishing a written transcript of these interviews. Within the written transcript all identifiers will be replaced with a code. I understand that audiotapes will not contain my name or any other identifying information that links the audiotape to me.

Yes No

6. I would like a copy of the study's results sent to me when available

Yes No

7. I give permission for de-identified data I provide as part of my participation in this project to be used by other research students working with the research team at the Centre for Brain & Mental Health Research, University of Newcastle.

Yes No

I have been assured that the answers to the survey questions will remain confidential subject to any disclosure requirements established by law and departmental policy.

Research Project Title: **Integrated multimedia psychosocial treatment for co-existing substance use, depression, and anxiety within a stepped care framework: A feasibility pilot study of treatment outcomes.**

Participant signature: _____ Age: _____

Date: _____

I have given a verbal explanation of the research project, its procedures and risks and I believe the participant has understood that explanation

Researcher signature: _____

Date: _____

Prepared September 1998 - amended March 2005
By the Clinical Drug Trials Sub-Committee

Appendix E:
Ethics Variation Approval

file:///C:/Users/Frances/AppData/Local/Temp/XPpwise/722010343...

HUMAN RESEARCH ETHICS COMMITTEE



Notification of Expedited Approval

To/Chief Investigator or Project	Mrs Frances Kay Lambkin
Cc: investigators / Research Students:	Associate Professor Jennifer Bowman Mr Steve Chikls Mr Aaron Simpson Ms Samantha Wolfe Ms Alison Healey
Re Protocol	Integrated multimedia psychosocial treatment for coexisting substance use, depression and anxiety within a stepped-care framework: A feasibility pilot study of treatment outcomes
Date:	02-Jul-2010
Reference No:	H-2008-0271

Thank you for your Variation Submission to the Human Research Ethics Committee (HREC) see Q, g approval in relation to a variation to the above protocol.

Variation to:

1. Add Ms Alison Healey and Ms Samantha Wolfe to the research team as student researchers.
2. Amend the timing of assessments (now conducted at baseline and 3 months).
3. Add the following instruments to the assessments for the participants:
 - a. Treatment Motivation Questionnaire
 - b. Opiate Treatment Index; and
 - c. Computer Anxiety Questionnaire.
4. Add an Motivational Scale and Computer Opinion Survey to the clinician baseline and follow-up interview protocol.
5. Amend the study documents accordingly:
 - a. Information Statement - Clinician (now v16, dated 30/04/10);
 - b. Consent Form - Clinician (now v3, dated 30/04/10);
 - c. Information Statement - Client (now v6, dated 30/04/10);
 - d. Consent Form - Client (now v3, dated 30/04/10); and
 - e. SHADE 2010 - Initial Assessment (modified 30/04/10).

Your submission was considered under Expedited review by the Chair/Deputy Chair.

I am pleased to advise that the decision on your submission is Approved effective 30-July-2010.

The full Committee will be asked to ratify this decision at its next scheduled meeting. A formal Certificate of Approval will be available upon request.

Please note and the following:

1. Recruitment Script (used by Healey & Wolfe when notifying clients of the study).
- The script should point out that the student researchers will only have access to anonymous data.

Appendix F:

Full method, study protocol article

Study protocol: a dissemination trial of computerized psychological treatment for depression and alcohol/other drug use comorbidity in an Australian Clinical Service.

BMC Psychiatry

F.J. Kay-Lambkin^{a,b}, A.L. Baker^b, A. Healey^{c,d}, S. Wolfe^{c,d}, A. Simpson^c, M. Brooks^{c,d},
J. Bowman^c & S. Childs^d

^a *National Drug and Alcohol Research Centre, University of New South Wales, Sydney, Australia.* ^b *Centre for Brain and Mental Health Research (CBMHR), University of Newcastle, Newcastle, Australia.* ^c *School of Psychology, University of Newcastle, Newcastle, Australia.* ^d *Central Coast Drug and Alcohol Clinical Service, Northern Sydney Central Coast Area Health Service, Australia.*

Frances Kay-Lambkin, Research Fellow (Correspondence);

E-mail: f.kaylambkin@unsw.edu.au, Phone: +61 2 40335690, Fax: +61 2 40335692

National Drug and Alcohol Research Centre, University of New South Wales, New South Wales, Australia

and

Centre for Brain and Mental Health Research (CBMHR), Faculty of Health, University of Newcastle, Callaghan, NSW 2308, Australia.

Amanda Baker, Professor;

Centre for Brain and Mental Health Research (CBMHR), Faculty of Health, University of Newcastle, Callaghan, NSW 2308, Australia.

Alison Healey, Student/Clinician;

School of Psychology, University of Newcastle, Newcastle, Australia

And

Central Coast Drug and Alcohol Clinical Service, Northern Sydney Central Coast Area Health Service, Australia.

Samantha Wolfe, Student/Clinician

School of Psychology, University of Newcastle, Newcastle, Australia

and

Central Coast Drug and Alcohol Clinical Service, Northern Sydney Central Coast Area Health Service, Australia.

Aaron Simpson, Student

School of Psychology, University of Newcastle, Newcastle, Australia.

Michelle Brooks, Student/Clinician

School of Psychology, University of Newcastle, Newcastle, Australia

and

Central Coast Drug and Alcohol Clinical Service, Northern Sydney Central Coast Area Health Service, Australia.

Jenny Bowman, Associate Professor

School of Psychology, University of Newcastle, Newcastle, Australia.

Steven Childs, Clinical Director

Central Coast Drug and Alcohol Clinical Service, Northern Sydney Central Coast Area Health Service, Australia.

Word Count Abstract: 292

Word Count Manuscript: 2,640

Number of Tables: 1

Abstract

Background

The rise of the internet and related technologies has significant implications for the treatment of complex health problems, including the combination of depression and alcohol/other drug (AOD) misuse. To date, no research exists to test the real world uptake of internet and computer-delivered treatment programs in clinical practice. This study is important, as it is the first to examine the adoption of the SHADE treatment program, a DVD-based psychological treatment for depression and AOD use comorbidity, by clinicians working in a publicly-funded AOD clinical service. The study protocol that follows describes the methodology of this dissemination trial.

Methods/Design

19 clinicians within an AOD service on the Central Coast of New South Wales, Australia, will be recruited to the trial. Consenting clinicians will participate in a baseline focus group discussion designed to explore their experiences and perceived barriers to adopting innovation in their clinical practice. Computer comfort and openness to innovation will also be assessed. Throughout the trial, current, new and wait-list clients will be referred to the research program via the clinical service, which will involve clients completing a baseline and 15-week follow-up clinical assessment with independent research assistants, comprising a range of mental health and AOD measures. Clinicians will also complete session checklists following each clinical session with a client, outlining the extent to which the SHADE computer program was used. Therapeutic alliance will be measured at intake and discharge from both the clinician and client perspectives.

Discussion

This study will provide comprehensive data on the factors associated with the adoption of an innovative, computer-delivered evidence-based treatment program, SHADE, by clinicians working in an AOD service. The results will contribute to the development of a model of dissemination of SHADE, which could be applied to a range of technological innovations.

Clinical Trials Registry

ACTRN12611000382976

Introduction

Mounting pressure is exerted on the health system by the increasing prevalence of depression and alcohol/other drug (AOD) misuse. These disorders are ranked 3 and 17 in contribution to the global disease burden, with depression elevated to 1st place and alcohol abuse use to 5th among middle-high income countries such as Australia [1]. Efficacious treatments have been tested with success for both depression [2] and AOD disorders [3], suggesting that this burden can be reduced.

Despite this, the gap between need for and receipt of these treatments is large, particularly for counselling [4], which is often preferred over pharmacotherapy [5]. For example, in the US, 2.1 million people with a 12-month mental disorder did not use services for mental health problems but perceived they had an unmet need [6]. Of these, the highest unmet need was for counselling [6]. Comorbidity, or the co-occurrence of two or more disorders, is the rule rather than the exception in clinical practice [7], with up to 89% of people with AOD use disorders also experiencing depression [8]. The presence of comorbid disorders compounds difficulties in treatment access and provision [9].

Mental health and AOD researchers and clinicians must respond to these issues, by developing and evaluating treatment programs that address depression and AOD use disorders, whilst minimising cost and maximising efficient use of clinician time and client outcomes. Available evidence-based treatments provide for single problems (e.g. depression or alcohol misuse) rather than the comorbidity with which clients typically present [7]. Treatments are often high intensity, require specialist input and training,

and are therefore only accessible to a minority of clients [10]. For these reasons, many clinicians are not able, or willing, to implement these interventions in practice.

The increased availability and use of computer/internet-based programs as a supplement to health care is also a potential solution to well-documented treatment accessibility problems [11], particularly among people with depression and AOD use comorbidity. Interactive and multimedia options offer the potential for higher levels of engagement than other self-help modalities [12]. Computers/the internet offer the opportunity for widespread dissemination of treatments, reaching a large audience in a cost effective and timely manner [13]. Experts also suggest that the integration of internet/computer-delivered interventions into practice, will increase adherence to evidence-based treatment protocols, and increase the number of practitioners who can deliver highly specialized psychological treatments [14].

Internet/computerized CBT treatment programs have established efficacy for a range of mental disorders and other health conditions [15]. Our previous work has reported on the efficacy of computerized psychological treatment for concurrent depression and AOD use disorders [SHADE treatment, 16]. In a recent randomized controlled clinical trial involving 97 participants, SHADE computerized treatment was associated with significantly greater reductions in depression relative to a one-session treatment, and equivalent reductions in depression to a face-to-face treatment combining cognitive behavioural therapy (CBT) and motivation enhancement (ME). There was a significant advantage of computerized SHADE for marijuana use over time, with participants in SHADE reporting twice the reduction in marijuana use as the face-to-face condition and approximately five times the reduction as the one-session treatment at 12 month follow-

up [16]. Computerized SHADE was also associated with similar reductions in alcohol use over 12 months as the equivalent face-to-face-delivered combination CBT/ME program [16].

Whilst it is generally accepted that internet/computer-delivered CBT programs are efficacious, with some indicating equivalent benefits to face-to-face-delivered programs, there is very little real world research that demonstrates the benefits and acceptability of these programs in practice and service settings [14]. There is some evidence to suggest that, in the US, only 48% of primary care patients would consider using internet-delivered CBT, compared to 91% for traditional face-to-face therapy [14]. However, other evidence suggests that clinicians, including psychologists and CBT practitioners, are more open to using these alternatives as supplements to the care they are able to provide [17]. Consequently, the current study was commenced with the aim of exploring clinician and client uptake, accessibility and response to a computerized CBT/ME treatment for depression and AOD use (SHADE treatment) within a publicly-funded Drug and Alcohol Clinician Service in New South Wales, Australia.

Methods/Design

Study aims

The purpose of this original research is to test the effectiveness of the SHADE computerized treatment program, from both a clinician and client perspective, within the real world clinical setting. It is hypothesised that clients exposed to the SHADE program will report superior reductions in depression and AOD use relative to those who are not exposed, and that this response may be moderated by primary drug of

concern (e.g. marijuana vs. other drug use), coercion into treatment and computer comfort. It is also hypothesised that there will be an association between clinician openness to innovation, clinician computer comfort and the use of SHADE in clinical practice.

Study setting

This is a real world dissemination trial, conducted within a publicly-funded Drug and Alcohol Clinical Service (DACS) on the Central Coast of New South Wales, Australia. The DACS forms part of a general health service, and provides a range of clinical interventions to residents within the catchment area with AOD use problems. Services include counselling, detoxification (hospital-based and outreach), needle and syringe programs, pharmacotherapy services, a diversion program for people with AOD use problems and legal issues (Magistrates Early Referral Into Treatment, MERIT), and a specialist service targeting clients with a primary drug of concern of marijuana. A central intake service acts as the point of initial contact for access to DACS, with subsequent referrals made to relevant services as appropriate. Client and Clinician participants will be recruited from the counselling services associated with the Central Coast DACS. There are three counselling teams within this service, AOD Counselling, Marijuana Clinic and MERIT.

Participants – Clinicians

Clinicians working within the Counselling, Marijuana Clinic and MERIT teams will be invited to participate in the study. At a minimum, these clinicians will have a tertiary education in a counselling-related field, with at least an undergraduate degree in nursing or psychology.

Participants – Clients

All clients, new and ongoing, will be invited to partake in the study. Participants will be aged 18 years and over and residing on the Central Coast and surrounding areas of New South Wales. Participants will consist of individuals attending counselling with primary presenting issues related to substance abuse or dependence.

Study design

This study is designed to observe, and not prescribe, the use of the SHADE computerized treatment program within the Central Coast DACS. Ethics approval for the study has been obtained from several relevant Human Research Ethics Committees, led by the Northern Sydney Central Coast Human Research Ethics Committee (08/HARBR/78/79).

Clinicians

At information sessions conducted by the authors, clinicians in each team associated with the DACS were introduced to the study and asked to provide consent to participate. Participation involves five activities:

- (1) Completion of a baseline focus group discussion regarding the use of innovation in clinical practice.
- (2) Completion of a baseline questionnaire regarding their openness to innovation and computer comfort.
- (3) Use of the SHADE treatment program with new and ongoing clients in whatever manner they choose, with delivery of the DVD content of the program either contained within the clinic session or provided to clients to complete in their own home in between clinic sessions.
- (4) Referral of contact details for new and ongoing clients to the client-data-collection phase throughout the study period, regardless of their exposure to the SHADE treatment program.

- (5) Completion of session checklists following every counselling session with new and ongoing clients, regardless of their exposure to the SHADE treatment program, and therapeutic alliance measures at intake and discharge for all clients.

Current/Ongoing Clients

Following the provision of contact details to the research team via their clinician, current and ongoing clients of the DACS are contacted to discuss consent to participate in the study. Once consent is established, clients complete a baseline and 12-week follow-up assessment delivered over the telephone by research assistants independent from the DACS. Clients are reimbursed \$20 AUD for each completed assessment.

Wait-list Clients

New referral to the DACS, via the centralized intake service, who have not been allocated to a clinician, will be contacted by AH, SW or MB (clinicians of the DACS) to discuss study participation and consent to release contact details to the research team. Once these details have been provided to the research team, wait-list clients consent to complete a baseline and 12-week telephone assessment in the same manner as current/ongoing clients. Wait-list clients are reimbursed \$20 AUD for each completed assessment.

The SHADE Treatment Program

The SHADE treatment program has been described elsewhere [16, 18], and incorporates CBT and ME strategies to encourage reductions in depression and AOD use. The program is available in two formats: (i) a 10-session program designed to be completed

in a linear fashion, once weekly for 10 weeks, with content pre-programmed for each session; and (ii) a skill module program, where a series of shorter modules are presented based on themes related to depression and AOD use problems (e.g. coping with cravings, taking charge of my thoughts, staying well) arising from the 10-week program. Clients and/or clinicians may choose to focus on just one skill module during a session, without having to complete the other skills and strategies contained in the resource. Both versions of the SHADE program appear on the one DVD-Rom from which the program operates. Text is pitched at a reading age of 14 years, with a voiceover available to read out all text contained in the resource. Video case scenarios guide clients through a range of skills and strategies, and a range of handouts and worksheets are also available for clients/clinicians to print out and use during a session or as a homework activity.

Assessments

All assessment instruments are widely used in mental health and/or AOD treatment research and practice.

Clinicians

Clinicians will participate in a baseline focus group discussion designed to elicit their attitudes and concerns about adopting innovation into their clinical practice in general, and the SHADE treatment program in particular. Table 1 displays the structure of this focus group discussion.

Table 1: Clinician focus group protocol

- (1) What sources do you use to inform your clinical practice (e.g. journals, workshops, clinical guidelines)?
- (2) What influences you in deciding on when to use a particular strategy, technique, or resource during a session with a client? How do handouts, self-help books and other information for clients fit into this process?
- (3) Have you incorporated any technology into your sessions with clients already? How did you do that, and what was the result?
- (4) Are there any advantages to using technology, e.g. SHADE, as an adjunct to your clinical practice? And what might the disadvantages or concerns be? What are the main issues?
- (5) What are some of the supervision and supports you think that you might need to have in place to assist you in using technology in your clinical practice?

Subsequent to completing the focus group discussion, clinicians complete two further self-report measures:

- (1) Innovativeness Scale [19]: a 20-item measure using a 7-point Likert-type scale assessing the likelihood of an individual to adopt innovative strategies in their work.
- (2) Computer Opinion Survey [20]: a 26-item measure using a 6-point Likert-type scale, developed as a measure of the trait of computer anxiety rather than the “state” of computer anxiety.

During the course of the study, clinicians complete a session checklist at the conclusion of each session with a client, which outlines the focus and content of the session, including whether or not SHADE or other technologies were used. The checklist was developed by the authors to specifically suit the Central Coast DACS and the range of counselling interventions applied by the clinicians. Please see Appendix A for a copy of the session checklist.

At intake and discharge with a client, clinicians also complete the therapist scale of the Agnew Relationship Measure [21]. This scale asks clinicians to rate, on a 7-point Likert scale, 28 items relating to the extent to which they feel a bond, partnership, confidence, openness, and client initiative are features of the therapeutic relationship with their client.

Clients

Following the provision of consent, clients complete the following set of assessment measures at baseline and 12-weeks post-baseline via telephone with a trained research clinician, who is independent of the Central Coast DACS. The following questionnaires take between 30-45 minutes to complete:

- (1) Demographics: information includes age, gender, occupational and marital status, children, educational experience, ethnicity and current accommodation arrangements.

- (2) Service Utilisation: includes current and previous treatments, including self-reported hospitalisations, attendance at clinics, rehabilitation programmes, contact with community mental health teams, psychologists, psychiatrists, other health professionals, involvement in AOD detoxification and counselling, methadone maintenance, 12-step programmes, use of general practitioners, and use of medication (including compliance).
- (3) Opiate Treatment Index [22]: a quantity/frequency index to estimate average daily use of 11 drug types (alcohol, marijuana, heroin, other opiates, amphetamines, cocaine, hallucinogens, barbiturates, tranquilisers, inhalants and tobacco) in the month prior to assessment.
- (4) Treatment Motivation Questionnaire: is a 26 item self-report measure, examining four components of motivation including internal and external motivation, help seeking and confidence in treatment. A 7-point Likert scale is used to examine the level of motivation.
- (5) Depression Anxiety Stress Scale 21-item version [23]: a 21-item screening tool to for depression, anxiety and stress in the previous 7 days. A 4-point Likert-type scale is used to determine the extent to which a symptom applied to the person.
- (6) Global Assessment of Functioning [24]: a clinician-rated assessment of current functioning.
- (7) Self-compassion Scale [25]: is a 26-item measure using a 5-point Likert-type scale assessing the extent to which a person expresses self-compassion towards themselves in difficult times.

- (8) Agnew Relationship Measure – Client Version [21]: this client-rated measure of therapeutic alliance is similar in content and structure to the therapist-rated version previously described.

We plan to report the cost of delivering the intervention in real world settings and the cost impacts of the outcomes achieved by calibration of selected instruments used in the study (e.g. Quality of Life Scale, Global Assessment of Functioning) with those achieved in other costing studies.

Sample size calculation

Clients

A 50% consent rate is estimated from the 250 eligible clients passing through the Central Coast DACS within the study timeframe (N=125). Previous research conducted by the authors has achieved consent rates of 50% for participants recruited from the general community [e.g. via media advertisements, 16]. We obtained higher consent rates (i.e. 82%) when previously recruiting directly from DACS [16], however we have estimated our sample size recruitment rates based on the lowest figure. Previous research with the target population has resulted in an 80% retention rate over a 15-week period [16], translating to a final projected sample size of 100 retained participants at the 15-week follow-up for the current study.

Clinicians

All clinicians working with the Central Coast DACS are invited to participate in the study, providing a maximum of 19 clinician participants for the trial. Assuming clients

are distributed equally between the clinicians, each clinician will see 13 clients during the study period (250/19). Service data from the Central Coast DACS indicate the average occasion of service for clients engaged with the service is three sessions.

Assuming a

50% compliance rate with completion of session checklists by clinicians, we estimate having a pool of 342 session checklists for analysis.

Statistical Analyses

Clients

For the client sample, primary outcome measures are changes in depression, alcohol and marijuana use between baseline and 12-week follow-up.

Previous research using the SHADE resource among substance users [16] has resulted in effect size differences of 0.42 between clients exposed to the SHADE resource versus not on depression, alcohol and marijuana use. Assuming similar effect size differences will apply to the current study, we estimate that a sample size of 72 is required at 15-week assessment to achieve adequate power (power=0.81) to detect differences of this order using repeated measures analysis of variance with an alpha level of 0.05 (calculated using G*Power, version 3.1.2). Predictors of alcohol use, marijuana use and depression at 15-weeks relevant to the current study (e.g. client rated therapeutic alliance, internal and external motivation and coerced vs non coerced clients, exposure to SHADE) will be modelled using a linear regression analysis. This sample size will also enable us to examine an effect size of 0.15 for a linear multiple regression for these outcome variables, with up to 6 predictors, an alpha level of 0.05 and a power coefficient of 0.80 (actual sample size required = 98).

Clinicians

Given the small sample size of clinicians associated with the DACS, descriptive analyses only will be performed on the clinician measures associated with innovation, computer comfort and reported use of the SHADE resource.

Competing interests

None of the authors have any competing interests arising from this research.

Author contributions

FK-L, AB, AS, AH, SW, MB & SC contributed to the design of the study and developed the protocol. FK-L, AS, AH, SW & MB gained ethical approval for the trial through Northern Sydney Central Coast Human Research Ethics Committee. All authors contributed to manuscript preparation. All authors approved the final manuscript for submission.

References

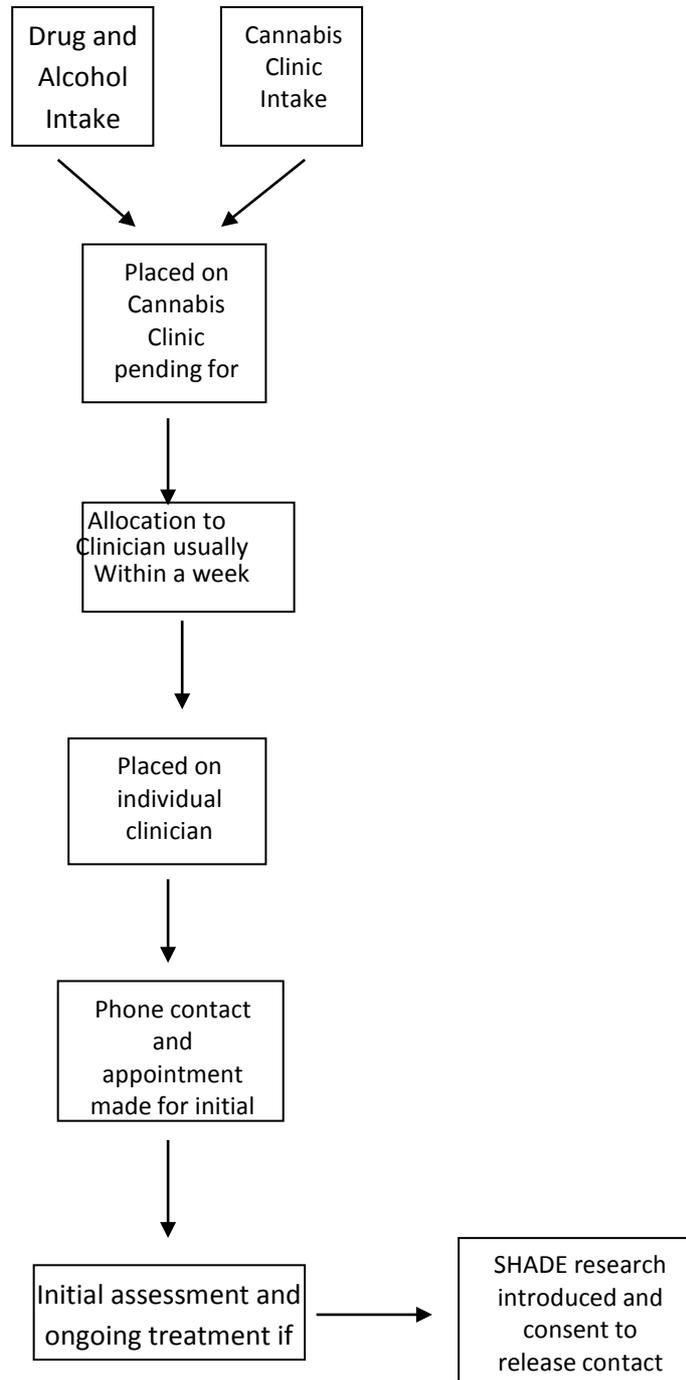
1. WHO: *The Global Burden of Disease: 2004 update*. Geneva: World Health Organisation (WHO) Press; 2008.
2. APA: *Practice guideline for the treatment of patients with major depressive disorder (Revision)*. *American Journal of Psychiatry* 2000, **157**:1-45.
3. APA: *Practice guideline for the treatment of patients with substance use disorders: Alcohol, cocaine, opioids*. *American Journal of Psychiatry* 1995, **152**:1-59.
4. ABS: *National Survey of Mental Health and Wellbeing: Summary of Results, 2007* Canberra: Australian Bureau of Statistics, Publication No. 4326.0; 2008.
5. Tylee A: *Major depressive disorder (MDD) from the patient's perspective: overcoming barriers to appropriate care* *International Journal of Psychiatry in Clinical Practice* 2001, **5**:s37-s42.
6. ABS: *National Survey of Mental Health and Wellbeing: Summary of Results*. Canberra, Australia: Australian Bureau of Statistics; 2007.
7. Kay-Lambkin FJ, Baker A, Lewin T: *The 'co-morbidity roundabout': a framework to guide assessment and intervention strategies and engineer change among people with co-morbid problems*. *Drug and Alcohol Review* 2004, **23**:407-424.
8. Helmus TC, Downey KK, Wang LM, Rhodes GL, Schuster CR: *The relationship between self-reported cocaine withdrawal symptoms and history of depression*. *Addictive Behaviors* 2001, **26**:461-467.
9. Kavanagh DJ, Mueser K, Baker A: *Management of co-morbidity*. In *Co-morbid Mental Disorders and Substance Use Disorders: Epidemiology, Prevention and Treatment*. Edited by Teesson M. Canberra: Commonwealth of Australia; 2003: 78-107
10. Brown CH, Ten-Have TR, Jo B, Dagne G, Wyman PA, Muthen B, Gibbons RD: *Adaptive Designs for Randomized Trials in Public Health*. *Annual Review of Public Health* 2009, **30**:1-25.
11. Kaltenthaler E, Parry G, Beverley C, Ferriter M: *Computerised cognitive-behavioural therapy for depression: systematic review*. *British Journal of Psychiatry*, **193**:181-184.
12. Christensen H, Griffiths KM, Korten A: *Web-based Cognitive Behavior Therapy: Analysis of Site Usage and Changes in Depression and Anxiety Scores*. *Journal of Medical Internet Research* 2002, **4**:e3.
13. Bridgette M, Bewick A, Trusler A, Barkham C, Hill AJ, Cahill J, Mulhern B: *The effectiveness of web-based interventions designed to decrease alcohol consumption — A systematic review*. *Preventive Medicine* 2008, **47**:17-26.
14. Andersson G: *The promise and pitfalls of the internet for cognitive behavioral therapy*. *BMC Medicine* 2010, **8**:82.
15. Proudfoot JG: *Computer-based treatment for anxiety and depression: Is it feasible? Is it effective?* *Neuroscience and Biobehavioral Reviews* 2004, **28**.
16. Kay-Lambkin FJ, Baker A, Lewin TJ, Carr VJ: *Computer-based psychological treatment for comorbid depression and problematic alcohol and/or cannabis use: a randomized controlled trial of clinical efficacy*. *Addiction* 2009, **104**:378-388.
17. Wangberg SC, Gammon D, Spitznogle K: *In the eyes of the beholder: exploring psychologists' attitudes towards and use of e-therapy in Norway*. *Cyberpsychology & Behavior* 2007, **10**:418-423.
18. Kay-Lambkin FJ, Baker A, Lewin TJ, Carr VJ: *Acceptability of a clinician-assisted computerized psychological intervention for comorbid mental health and substance use problems: Treatment adherence data from a randomized controlled trial*. *Journal of Medical Internet Research* 2011, **13**:e11p11-e11-p11.
19. Hurt HT, Joseph K, Cook CD: *Scales for the measurement of innovativeness*. *Human Communication Research* 1977, **4**:58-65.
20. Maurer MM, Simonson MR: *The reduction of computer anxiety: its relation to relaxation training, previous computer coursework, achievement, and need for cognition*. *Journal of Research on Computing in Education* 1994, **26**:205.
21. Agnew-Davies R, Stiles WB, Hardy GE, Barkham M, Shapiro DA: *Alliance structure assessed by the Agnew Relationship Measure*. *British Journal of Clinical Psychiatry* 1998, **37**:155-172.

22. Darke S, Hall W, Wodak A, Heather N, Ward J: **Development and validation of a multi-dimensional instrument for assessing outcome of treatment among opiate users: the Opiate Treatment Index.** *British Journal of Addiction* 1992, **87**:733-742.
23. Lovibond SH, Lovibond PF: **Manual for the depression anxiety stress scales.** Sydney: Psychology Foundation; 1995.
24. APA: **Global assessment of functioning scale.** In *Diagnostic and Statistical Manual, Fourth Edition.* Washington: American Psychiatric Association; 1994
25. Neff KD: **Development and validation of a scale to measure self-compassion.** *Self and Identity* 2003, **2**:223-250.

Appendix G:

Cannabis Clinic intake and recruitment procedure

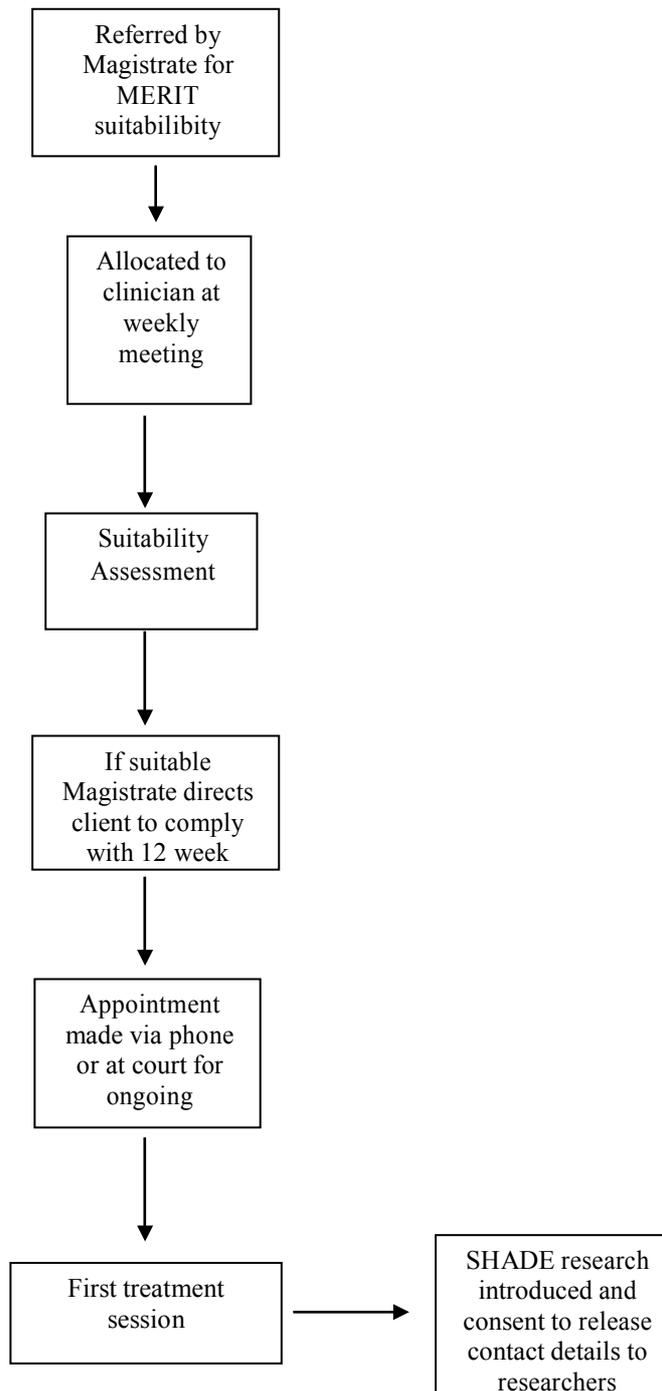
Appendix G: Cannabis Clinic Intake and Recruitment Procedure



Appendix H:

MERIT intake and recruitment procedure

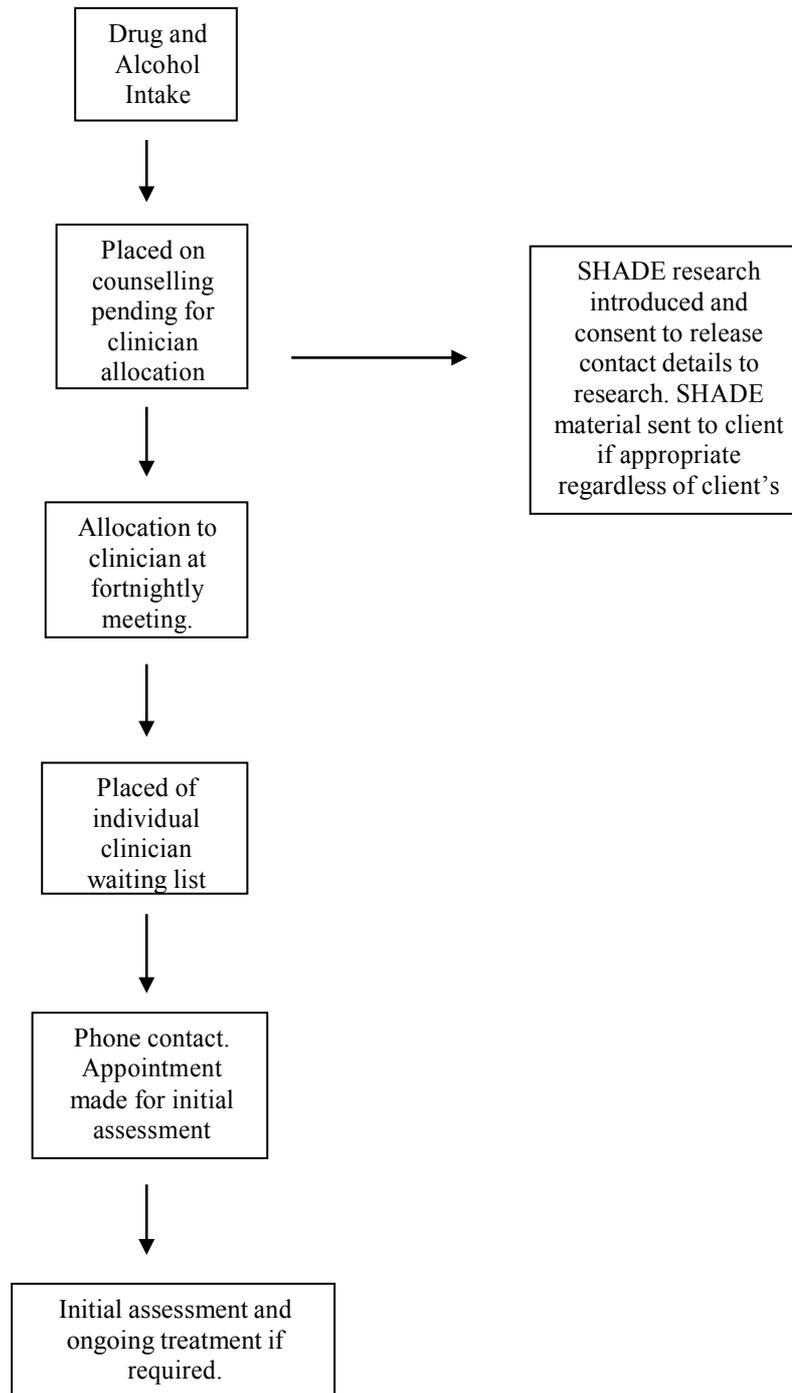
Appendix H: MERIT Intake and Recruitment Procedure



Appendix I:

Counselling Team intake and recruitment procedure

Appendix I: Counselling Team Intake and Recruitment Procedure



Appendix J:

Researcher recruitment script for own clients

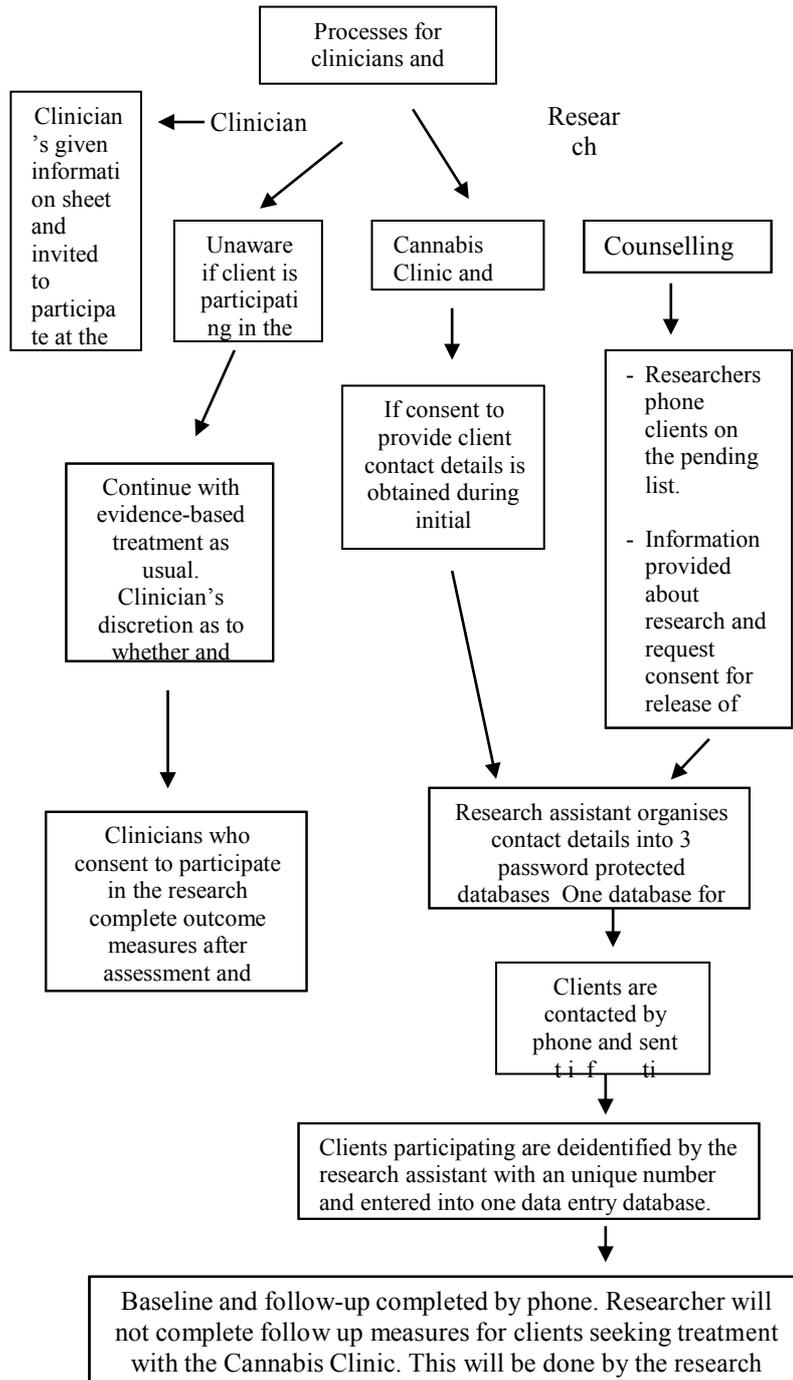
Appendix J: Researchers recruitment script for own clients

I need to let you know that, although I am your counsellor, I am also involved in this research project, and will be accessing data to analyse for my degree. I don't want this involvement to make you feel like you have to participate in the research. I won't know either way whether you have chosen to participate, and your decision whether to participate is completely independent to your treatment here with me in Cannabis Clinic. For the research I will only have access to anonymous data. So if you give permission, your contact details will be forwarded a research assistant and they will contact you to discuss the possibility of participating in the study.

Appendix K:

Processes for clinicians and researchers

Appendix K: Processes for clinicians and researchers



Appendix L:

Initial interview assessment

Appendix L:
THE SHADE PROJECT – 2010

**KEEP THIS PAGE SEPARATE FROM THE
PERSON’S COMPLETED ASSESSMENT**

Client’s Name: _____

Client’s Address: _____

Client’s Phone: _____

Participant Number:

Date of Initial Assessment: //

Interviewer:

Location: _____



Alternative Contact person: _____

Alternative Contact Address _____

Alternative Contact Phone (H/M): _____

Relationship to client: _____



General Practitioner _____

Psychiatrist _____

Case Manager _____

The Shade Project 2010

Interview: Initial

(Final Version – 30/04/2010)

Participant Number:

--	--	--	--

Centre for Brain and Mental Health Research,
The University of Newcastle

Referral Source?

- | | |
|---|--|
| <p>0=Self</p> <p>1= Community Mental Health</p> <p>2= Media (newspaper/radio/tv)</p> <p>3= Centrelink</p> <p>4=Youth Services</p> <p>5=University Health Services</p> <p>6= Methadone Clinic</p> <p>7= Probation and Parole</p>
<p>8= Private Psychologist</p> <p>9= Private Psychiatrist</p> <p>12=Public psychiatric unit in a public hospital</p> <p>13=Private psychiatric hospital</p> <p>14=Public drug and alcohol unit</p> <p>15=Private drug and alcohol unit</p> <p>16= Personal Support Provider (ie New Horizons)</p> <p>88=Other (specify) _____</p> <p>99=NA</p> | <p>10=General Practitioner</p> <p>11=Public psychiatric hospital</p> |
|---|--|

SECTION A: DEMOGRAPHICS

A1. Date of birth / /

A2. Age (years)

A3. Sex 1=Male 2=Female

A4. Country of birth – *What country were you born in?*
 1=Australia 6=South East Asia
 2=UK and Ireland 7=Indian subcontinent and other Asia
 3=Europe (including former USSR) 8=Middle East
 4=Central and South America 9=North Africa
 5=NZ, Pacific islands, PNG 10=Central and Southern Africa
 11=other

A5. Aboriginal /Torres Strait islander descent

Are you of Aboriginal or Torres straight Islander descent?

0=No

1=Yes

A7. Present Marital Status

What is your marital status? Have you been living with a partner for 6 months or more?

0=Single, never married
 1=Married
 2=Defacto

8=NK

3=Separated

4=Divorced

5=Widowed

A8. Number of children
How many living children do you have? (include step-children)
 00=No children

Skip to A11 if NO Children

A9. Children living with subject
How many dependent children under the age of 18 do you have living with you?
 (Include step-children)
 00=No children

A10. Main carer for the children or not
Have you been the main carer for the children in the last 12 months?

0=No

1=Yes

8=NK

9=NA

A11. Who do you live with?

1=Parent(s)

2=Spouse +/- children

3=Defacto partner +/- children

4=Friend(s)

5=Alone

7=Relatives

8=Other (specify _____)

9=No fixed address

10=Institution

6=Children without partner

--	--

A12. Accommodation during last month
Where have you been living during the last month?
How long have you lived there/been homeless?

Code up to 3 types of accommodation in past month, if applicable

Code number of weeks in each accommodation in last month (01=<1 week)

Accommodation #1 N. Wks
 Accommodation #2 N. Wks
 Accommodation #3 N. Wks

- | | | |
|-------------------------------------|--------------------------------------|--------------------------|
| 01= Homeless / NFA | 04= Institution: hospital | 10=Rented room (private) |
| 02= Crisis shelter or rooming house | 05= Institution: nursing home, lodge | 11=Own home |
| 03= Hostel | 06=Group home | 12=Family home |
| | 07=Supported housing | 88=Other (Specify_____) |
| | 08=Hotel/rented room | 99=NA |
| | 09=Rented room (public) | |

A13. Accommodation during the last 12 months (excluding the past one month already rated)
Where have you lived for more than a week during the last 12 months?
How long have you lived there/been homeless?

Code up to 3 types of accommodation longest held (if applicable)Code number of weeks in each type of accommodation during the previous 12 months

(01=<1 week)

Accommodation #1 N. Wks
 Accommodation #2 N. Wks
 Accommodation #3 N. Wks

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 01= Homeless/NFA | 04= Institution: hospital | 09=Rented room (public) |
| 02= Crisis shelter/rooming house | 05=Institution: nursing home, lodge | 10=Rented room (private) |
| 03= Hostel | 06=Group home | 11=Own home |
| | 07=Supported housing | 12=Family home |
| | 08=Hotel/rented room | 88=Other (Specify _____) |

A14. Age at leaving school
 How old were you when you left school?
 00=Never went to school
 88=Still at school

--	--

A15. Secondary school completion
Did you complete the highest year of secondary school available?
 0=No
 1=Yes
 9=NA

--

A16. Highest qualification obtained
What is the highest qualification you obtained?
 1=Secondary school qualification
 2=Nursing qualification

3=Teaching qualification

- 4=Trade certificate/apprenticeship
 5=Technician's/ advanced certificate
 6=Certificate other than above

- 7=Associate diploma
- 8=Undergraduate diploma
- 9=Bachelor degree
- 11=Masters degree/doctorate
- 12=Left school, no qualifications
- 88=Other
- 99=NA

A17. *During the past month, how frequently have you been taking part in any of the following jobs around the home? Would you say frequently, occasionally or not at all?*

- 0=Not at all
- 1=Occasionally
- 2=Frequently
- 8=NK

Cooking for others	<input type="checkbox"/>
Cleaning or washing up.....	<input type="checkbox"/>
Gardening.....	<input type="checkbox"/>
Shopping for household.....	<input type="checkbox"/>
Having meals together.....	<input type="checkbox"/>
Watching TV program together.....	<input type="checkbox"/>
Playing games.....	<input type="checkbox"/>
Doing Chores/Errands.....	<input type="checkbox"/>
Other Activities (specify: _____).....	<input type="checkbox"/>

A18. **Participation in Household Activities**

Over the past 12 months, have you been unable to do things that your family (or household) would normally expect of you?

*What have you been unable to do?
Do others not let you do things? Why?
Is it that you lack interest in it?*

Or have you been unable to do things because of physical/mental health or forgetfulness?
0= No dysfunction; has participated about as much as an average person of same sex/age group would under similar circumstances

- 1= Obvious dysfunction; household participation significantly reduced, due to lack of interest or incompetence
- 2= Severe dysfunction; no participation, self-alienated or excluded by others from daily household routine, or disruptive
- 8= Uncertain or impossible to assess
- 9= NA; does not share a household

A19. Availability of Friends

How many people do you regard as friends?

Ask the name of friend/s. Only count people outside the family. Some form of contact (face to face or phone conversation) over the last 12 months is required for considering a person a friend.

How often have you been seeing them over the past month?

And over the past year?

What do you do together?

0=None
1=One
2=A few
3=Many
88=NK
99=

A20. Perceived Need for Friends

Do you feel that you have as many good friends as you need or would you like to have more?

0=Does not need good friends at all
1=Needs and would like more friends
2=Has as many friends as needed
88=NK
99=NA

A21. Overall Socialising during past 12 months

How have you been getting on with other people at work, neighbours, family members during the last 12 months?

*Did you go out to any social activities?
Did you meet any friends, or would you say that you are a bit reserved? Did you make any phone calls to friends or other people you knew?
How much of the time did you spend alone, in your room, or just walking around on your own?
Did you feel lonely?*

Rate overall socialising/isolation over past 12 months – rate isolation on its own merits, regardless of self imposed (eg. avoidance).

0= No dysfunction; has been socialising during the period as much as could be expected of an average person of same sex/age group and social background

1= Obvious dysfunction; may regard some people as friends but actual socialising with them is minimal, has been significantly reduced, sporadic participation in any organised activity
2= Severe dysfunction; no friends and no organised social activities, extremely restricted social relationships outside the household
8= Uncertain or impossible to assess
9= NA

A22. Social Withdrawal during last 12 months

Would you say that over the past 12 months you enjoyed company a lot or preferred to be on your own?

*Did you find it difficult to mix or communicate with people? Did you prefer to be left alone?
About how much of the time did you spend doing things by yourself?
Would you join in the company of others if encouraged to do so, or would you normally refuse even if asked?
Did the presence of other people annoy you?*

Rate social withdrawal (ie. isolation which is not imposed by others or by the circumstances, but results mainly from subject's active avoidance of social contacts).

0= No dysfunction; mixes and generally interacts with people as much or more than the average person of the same sex/age group would under similar circumstances

1= Obvious dysfunction; maintains a very restricted range of social contacts, generally avoids being with other people, but would mix with people if encouraged or pressured

2= Severe dysfunction; marked tendency to self-isolation, not responsive to encouragement, inaccessible, may frequently lock him/herself up or wander aimlessly

8= Uncertain or impossible to assess

9= NA

A23. Deterioration in Interpersonal Relationships

If you compare the past 12 months with previous years, do you think that your relations with friends, workmates or other persons may have gotten worse?

Did this happen because of you health or nervous problems?

Or because you lost interest or motivation?

Or because others have lost interest in maintaining a relationship with you?

0= No deterioration perceived in the past year compared to previous years

1= Deterioration perceived mainly attributed to subject's own health/nervous problems or loss of interest

2= Deterioration perceived mainly attributed to other people's loss of interest

3= Improvement perceived in past year compared to previous years

8= NK

9= NA

A24. Intimate Relationships

During the past 12 months have you had a close female/male friend – someone that you would share your thoughts and feelings with or think of as a best friend, or someone you might rely on for support when you need it?

Have you ever had such a special relationship?

How often do you see this special friend?

0= Not dysfunctional; has close and/or intimate affective relationship during the past 12 months

1= Obvious dysfunction; has had close friends or intimate relationship in the past but not during the last 12 months

2= Severe dysfunction; never had close friend or intimate relationship

8= Uncertain or impossible to assess

9= NA

A25. Currently Employed

Do you have a job at present?

- 0=No job at present
- 1=Employment outside the home (full time job)
- 2=Employment outside the home (part time job)
- 3=Household
- 4=Studying
- 5=Retired
- 8=NK
- 9=NA

A26. If Unemployed, looking for work (past month)

At any time in the last 4 weeks have you been looking for full time or part time work?

- 0=No
- 1=Yes; looking for a full time job
- 2=Yes; looking for a part time job
- 8=NK
- 9=NA

A27. Participation in rehabilitation or day programme in last 12 months

When you were not in hospital, have you been involved in a rehabilitation or day program?

- 0=No
- 1=Yes
- 8=NK
- 9=NA

Skip to A30 if 0

A28. Number of weeks in rehabilitation or day program in last 12 months

How many weeks did you attend rehab/day program at _____?

--	--

(Range=0-52)

- 88=NK
- 99=NA

A29. Frequency of attendance of rehab/day program

How many days per week did you attend the rehab/day program at _____?

--	--

(Range=0-7)

- 88=NK
- 99=NA

A30. Current Source of Income

What are your main sources of income in the past month? Code up to 3 sources.

Source of current income #1

--	--

Source of current income #2

--	--

Source of current income #3

--	--

1=Wage/salary from employer
2=Own business
3=Family/spouse payment
4=Government pension/cash
benefit
5=Maintenance/child support

6=Superannuation/ annuity
7=Workers compensation/ accident or sickness
insurance
8=other income (specify _____)
88=NK
99=NA

A31. Pension/other benefits

Have you received any of the following pensions or benefits in the past month?

Read out the items below as a checklist. Code up to 3 types of benefit.

Present=past month Benefit #1

Benefit #2

Benefit #3

--	--

--	--

- 1= Age pension
- 2= Service pension
- 3= Disability support/invalid pension
- 4= Widow's pension or wife's pension
- 5= Carer's pension
- 6= Sole parent's pension
- 7= Sickness allowance/benefit
- 8= New start/job search/mature age allowance
- 9= Unemployed benefit
- 10= Special benefit
- 11= Other (specify _____)
- 88= NK
- 99= NA

A32. *Self Care in past month*

How much effort have you been putting into care for your appearance in the past month? Or keeping yourself healthy and fit?

Did you make a lot of effort to look neat and tidy, stylish or was this something that was of little importance to you?

Did you think at all about healthy eating or physical exercise?

Would you say that you were able to look after yourself, keep yourself clean, tidy your own room, do your laundry?

Did you let other people do this for you because you were not interested or had no energy?

0= No dysfunction; level of care normal, takes appropriate interest in own appearance and maintains reasonable standards without, or with minimum supervision

1= Obvious dysfunction; self care below average standard, likely to make an unfavourable impression *news? Can you give examples?*

Did you follow the football teams?

Have you been involved in any particular interests over the past four weeks? Did you read any books, buy newspapers or magazines? Which ones?

Have you developed any interests or hobbies?

0= No dysfunction; seeks information, talks with people about local and world events, has a 'world map' as appropriate to sociocultural context

1= Obvious dysfunction; less than average interest, no special efforts to obtain information, never reads anything, does not listen to radio or watch news on TV

8= Uncertain or unable to assess

9= NA (eg. moderate to severe intellectual handicap).

SECTION B: Drug Use History

Now I'm going to ask you some questions about your use of drugs.

Have you ever used any of the following drugs? When was the last time you used (Drug)?

Drug Class	Ever Used 1=Yes 2=No	When was the last time you used? 1=Never 2=More than 6 months ago 3=In the past 6 months 4=In the past month 5=In the past week 6=In the past few days	Is this the drug for which you are currently seeking treatment? 1=Yes 2=No
Alcohol			
Cannabis			
Heroin			
Other Opiates			
Amphetamines			
Cocaine			
Tranquilisers			
Barbiturates			
Hallucinogens			
Inhalants			
Tobacco			
caffeine			

Appendix M:

Client therapeutic alliance measure (ARM)

Appendix N:

Treatment Motivation Questionnaire (TMQ)

TREATMENT MOTIVATION QUESTIONNAIRE

Name:

DOB:

This questionnaire concerns people's reasons for entering treatment and their feelings about treatment. Different people have different reasons for entering treatment, and we want to know how true each of these reasons is for you. Please indicate how true each reason is for you, using the following scale:

A	I came for treatment at the clinic because:	not at all true		somewhat true			very true	
1	I really want to make some changes in my life.	1	2	3	4	5	6	7
2	I won't feel good about myself if I don't get some help.	1	2	3	4	5	6	7
3	I was referred by the legal system.	1	2	3	4	5	6	7
4	I feel so guilty about my problem that I have to do something about it.	1	2	3	4	5	6	7
5	It is important to me personally to solve my problems.	1	2	3	4	5	6	7

B	If I remain in treatment it will probably be Because:	not at all true		somewhat true			very true	
6.	I'll get in trouble if I don't.	1	2	3	4	5	6	7
7.	I'll feel very bad about myself if I don't.	1	2	3	4	5	6	7
8.	I'll feel like a failure if I don't.	1	2	3	4	5	6	7
9.	I feel like it's the best way to help myself.	1	2	3	4	5	6	7
10.	I don't really feel like I have a choice about staying in treatment.	1	2	3	4	5	6	7
11.	I feel it is in my best interests to complete treatment.	1	2	3	4	5	6	7

		Rate each of the following in terms of how true each statement is for you:						
		not at all true		somewhat true			very true	
12.	I came to treatment now because I was under pressure to come.	1	2	3	4	5	6	7
13.	I am not sure this program will work for me.	1	2	3	4	5	6	7
14.	I am confident this program will work for me.	1	2	3	4	5	6	7
15.	I decided to come to treatment because I was interested in getting help.	1	2	3	4	5	6	7
16.	I'm not convinced that this program will help me stop drinking.	1	2	3	4	5	6	7
17.	I want to openly relate with others in the program.	1	2	3	4	5	6	7
18.	I want to share some of my concerns and feelings with others.	1	2	3	4	5	6	7
19.	It will be important for me to work closely with others in solving my problem.	1	2	3	4	5	6	7
20.	I am responsible for this choice of treatment.	1	2	3	4	5	6	7
21.	I doubt that this program will solve my problems.	1	2	3	4	5	6	7
22.	I look forward to relating to others who have similar problems.	1	2	3	4	5	6	7
23.	I chose this treatment because I think it is an opportunity for change.	1	2	3	4	5	6	7
24.	I am not very confident that I will get results from treatment this time.	1	2	3	4	5	6	7
25.	It will be a relief for me to share my concerns with other program participants.	1	2	3	4	5	6	7
26.	I accept the fact that I need some help and support from others to beat my problem.	1	2	3	4	5	6	7

Scoring the TMQ

Calculate the four subscale scores by averaging the responses for items in that subscale. The external reasons and internalized reasons are the subscales that relate most directly to self-determination theory.

Note: An (R) after items in the Confidence subscale means that the item should be reverse scored before averaging it with other items in the subscale. To do that, subtract the person's response from 5. Thus, for example, a 3 becomes a 2. This way, a higher score means more confidence in treatment.

External Reasons	Internalized Reasons	Help Seeking	Confidence
	1 _____		
	2 _____		
3 _____	4 _____		
	5 _____		
6 _____	7 _____		
	8 _____		
	9 _____		
10 _____	11 _____		
12 _____			13(R) _____
			14 _____
	15 _____		16(R) _____
		17 _____	
		18 _____	
		19 _____	
	20 _____		21(R) _____
		22 _____	
	23 _____		24(R) _____
		25 _____	
		26 _____	
Total _____ = 4 *	Total _____ = 11 *	Total _____ = 6 *	Total _____ = 5 *
			Confidence: _____

Appendix O:
Additional Results

Table O.1

Demographic characteristics of the participant sample.

Demographic Variable	Coerced	Not Coerced	Chi squared
Sex			
Male	70.40%	58.00%	1.143, p=0.285
Female	29.60%	42.00%	
Employment Status			
Yes	25.90%	32.70%	0.373, p=0.541
No	74.10%	67.30%	
Income Status			
Pension	72.00%	75.00%	0.74, p=0.785
Wage	28.00%	25.00%	
Relationship Status			
Single	69.20%	76.00%	0.404, p=0.525
Relationship	30.80%	24.00%	

Table O.2

Pearson correlations between motivation and age (years).

Age (years)	Motivation			
	External Motivation	Internal Motivation	Help Seeking	Confidence in Treatment
	-0.332**	0.270*	0.227	0.059

*p<0.05 **p<0.001

Table O.3

Pearson correlations between therapeutic alliance and age (years).

Age (years)	Therapeutic Alliance				
	Bond	Partnership	Confidence in therapist	Openness	Initiative
	0.237	0.276*	0.306*	0.222	-0.136

*p<0.05 **p<0.001

Table O.4

Pearson correlations between baseline substance use and treatment motivation measures.

Substance Type	Treatment Motivation			
	External Motivation	Internal Motivation	Help Seeking	Treatment Confidence
Alcohol	0.17	-0.087	-0.108	-0.143
Cannabis	0.16	-0.176	-0.098	-0.093
Heroin	0.282*	-0.286*	0.794**	0.051
Other Opiates	0.238*	-0.238*	0.734**	0.036
Amphetamines	0.314**	-0.188	0.482**	-0.012
Cocaine	0.281*	-0.352**	0.789**	0.116
Tranquilisers	0.236*	-0.277*	0.763**	0.043
Barbiturates	0.236*	-0.268*	0.727**	-0.003
Hallucinogens	0.303**	-0.282*	0.769**	0.099
Inhalants	0.282*	-0.286*	0.794**	0.051
Tobacco	0.054	0.033	-0.230*	-0.01

*p<0.05 **p<0.001

Table O.5

Correlations between baseline substance use and measures of therapeutic alliance.

Substance Type	Therapeutic Alliance Measures				
	Bond	Partnership	Confidence	Openness	Initiative
Alcohol	0.096	-0.021	-0.091	0.248	-0.122
Cannabis	-0.042	-0.023	-0.073	-0.091	-0.074
Heroin	-0.644**	-0.823**	0.755**	-0.377**	0.977**
Other Opiates	-0.605**	-0.767**	0.682**	-0.391**	0.899**
Amphetamines	-0.445**	-0.611**	0.510**	-0.213	0.634**
Cocaine	-0.620**	-0.792**	0.627**	-0.361**	0.914**
Tranquilisers	-0.646**	-0.842**	0.720**	-0.362**	0.946**
Barbiturates	-0.608**	-0.777**	0.769**	-0.368**	0.917**
Hallucinogens	-0.612**	-0.782**	0.654**	-0.349**	0.929**
Inhalants	-0.644**	-0.823**	0.755**	-0.377**	0.977**
Tobacco	0.147	0.317**	-0.315**	0.004	-0.325**

*p<0.05 **p<0.001

Table O.6

The relationship between gender, motivation and therapeutic alliance

	N	Mean	Std. Deviation	F
External Motivation				
Male	47	2.901	1.699	$F(1,74) 0.238,$ $p=0.627$
Female	29	2.688	2.075	
Internal Motivation				
Male	47	5.639	1.261	$F(1,74) 0.086,$ $p=0.770$
Female	29	5.447	0.867	
Help Seeking				
Male	46	5.582	4.031	$F(1,73) 1.671,$ $p=0.200$
Female	28	6.839	4.150	
Confidence in Treatment				
Male	48	8.329	11.926	$F(1,75) 0.032,$ $p=0.858$
Female	29	7.793	13.825	
Bond				
Male	39	6.150	3.039	$F(1,65) 2.189,$ $p=0.144$
Female	28	5.131	2.374	
Partnership				
Male	39	5.635	1.783	$F(1,64) 1.189,$ $p=0.280$
Female	27	5.065	2.465	
Confidence in Therapist				
Male	39	6.523	2.590	$F(1,65) 2.089,$ $p=0.153$
Female	28	8.351	7.302	
Openness				
Male	39	5.219	1.067	$F(1,65) 0.850,$ $p=0.360$
Female	28	4.914	1.641	
Initiative				
Male	39	6.071	9.825	$F(1,65) 1.938,$ $p=0.169$
Female	28	10.982	18.779	

Table O.7

The relationship between treatment motivation and therapeutic alliance in substance using clients.

Treatment Motivation	Therapeutic Alliance				
	Bond	Partnership	Confidence	Openness	Initiative
External Motivation	-0.287*	-0.213	0.211	-0.293*	0.273*
Internal Motivation	0.290*	0.473**	-0.034	0.283*	-0.303*
Help Seeking	-0.473**	-0.624**	0.419**	-0.16	0.783*
Treatment Motivation Confidence	-0.031	-0.189	-0.009	0.066	0.08

Table O.8

Baseline differences in substance use for MERIT vs Counselling/Cannabis clients.

Substance Type	Participant Group	n	Mean	Std. Deviation	F
Alcohol	Counselling / cannabis	68	3.726	5.374	$F(1,79)1.125,$ $p=0.292$
	MERIT	13	2.089	3.156	
Cannabis	Counselling / cannabis	68	4.012	8.149	$F(1,79)1.181,$ $p=0.281$
	MERIT	13	1.488	4.115	
Heroin	Counselling / cannabis	68	0.088	0.286	$F(1,79)1.227,$ $p=0.271$
	MERIT	13	0	0	
Other Opiates	Counselling / cannabis	68	0.218	0.612	$F(1,79)1.625,$ $p=0.206$
	MERIT	13	0	0	
Amphetamines	Counselling / cannabis	68	0.149	0.432	$F(1,79)0.320,$ $p=0.573$
	MERIT	13	0.237	0.83	
Cocaine	Counselling / cannabis	68	0.177	0.571	$F(1,79)1.227,$ $p=0.271$
	MERIT	13	0	0	
Tranquilisers	Counselling / cannabis	68	0.205	0.583	$F(1,79)1.597,$ $p=0.210$
	MERIT	13	0	0	
Barbiturates	Counselling / cannabis	68	1.32	0.454	$F(1,79)1.094,$ $p=0.299$
	MERIT	13	0	0	
Hallucinogens	Counselling / cannabis	68	0.134	0.454	$F(1,79)1.120,$ $p=0.293$
	MERIT	13	0	0	
Inhalants	Counselling / cannabis	68	0.177	0.571	$F(1,79)1.227,$ $p=0.271$
	MERIT	13	0	0	
Tobacco	Counselling / cannabis	68	12.592	12.091	$F(1,79)1.123,$ $p=0.293$
	MERIT	13	16.5	12.702	
Poly substance	Counselling / cannabis	61	2.64	1.495	$F(1,72)0.166,$ $p=0.685$
	MERIT	13	2.46	1.05	

Table O.9

Baseline differences in substance use for coerced and non-coerced clients.

Substance Type	Participant Group	n	Mean	Std. Deviation	F
Alcohol	Not Coerced	54	3.649	5.614	$F(1,79) 2.13, p=0.646$
	Coerced	27	3.092	3.96	
Cannabis	Not Coerced	54	2.364	5.168	$F(1,79) 4.423, p=0.039$
	Coerced	27	6.093	10.842	
Heroin	Not Coerced	54	0.093	0.293	$F(1,79) 0.798, p=0.374$
	Coerced	27	0.037	0.192	
Other Opiates	Not Coerced	54	0.23	0.634	$F(1,79) 1.148, p= 0.287$
	Coerced	27	0.087	0.388	
Amphetamines	Not Coerced	54	0.151	0.451	$F(1,79) 0.095, p=0.759$
	Coerced	27	0.188	0.622	
Cocaine	Not Coerced	54	0.167	0.575	$F(1,79) 0.198, p=0.658$
	Coerced	27	0.111	0.424	
Tranquilisers	Not Coerced	54	0.23	0.59	$F(1,79) 0.503, p=0.480$
	Coerced	27	0.112	0.423	
Barbiturates	Not Coerced	54	0.13	0.436	$F(1,79) 0.315, p=0.576$
	Coerced	27	0.074	0.385	
Hallucinogens	Not Coerced	54	0.148	0.492	$F(1,79) 1.190, p=0.279$
	Coerced	27	0.41	0.193	
Inhalants	Not Coerced	54	0.185	0.585	$F(1,79) 0.798, p=0.374$
	Coerced	27	0.074	0.385	
Tobacco	Not Coerced	54	11.454	12.071	$F(1,79) 3.501, p=0.065$
	Coerced	27	16.75	11.88	
Poly substance	Not Coerced	47	2.55	1.599	$F(1,72)0.190, p=0.664$
	Coerced	27	2.7	1.068	

Table O.10

The relationship between coercion (MERIT vs Counselling/Cannabis) and components of therapeutic alliance and treatment motivation.

	N	Mean	Std. Deviation	F
External Motivation				
MERIT	13	4.33	1.678	$F(1,74) 12.604,$ $p=0.001$
Counselling/Cannabis	63	2.509	1.726	
Internal Motivation				
MERIT	13	5.518	1.313	$F(1,74) 0.175, p=0.677$
Counselling/Cannabis	63	5.374	1.088	
Help Seeking				
MERIT	12	5.125	1.871	$F(1,73) 0.728, p=0.396$
Counselling/Cannabis	63	6.228	4.38	
Treatment Motivation Confidence				
MERIT	13	12.831	20.665	$F(1,75) 2.219, p=0.141$
Counselling/Cannabis	64	7.172	10.213	
Bond				
MERIT	11	6.121	0.807	$F(1,65) 0.260, p=0.612$
Counselling/Cannabis	56	5.647	3.049	
Partnership				
MERIT	11	5.682	1.361	$F(1,64) 0.235, p=0.630$
Counselling/Cannabis	55	5.346	2.213	
Treatment Confidence				
MERIT	11	6	0.742	$F(1,65) 0.820, p=0.368$
Counselling/Cannabis	56	7.54	5.595	
Openness				
MERIT	11	4.764	1.579	$F(1,65) 0.794, p=0.376$
Counselling/Cannabis	56	5.156	1.287	
Initiative				
MERIT	11	4.273	1.38	$F(1,65) 0.947, p=0.334$
Counselling/Cannabis	56	8.88	15.571	

Table O.11

The relationship between coercion (coerced vs not coerced) and components of therapeutic alliance and treatment motivation.

	N	Mean	Std. Deviation	F
External Motivation				
Coerced	27	3.978	1.582	<i>F</i> (1,74) 20.991, <i>p</i> <0.001
Not Coerced	49	2.182	1.664	
Internal Motivation				
Coerced	27	5.014	1.189	<i>F</i> (1,74) 5.189, <i>p</i> =0.026
Not Coerced	49	5.61	1.034	
Help Seeking				
Coerced	26	5.295	3.857	<i>F</i> (1,73) 1.365, <i>p</i> =0.247
Not Coerced	49	6.452	4.197	
Treatment Motivation Confidence				
Coerced	27	8.578	14.675	<i>F</i> (1,75) 0.053, <i>p</i> =0.819
Not Coerced	50	7.884	11.458	
Bond				
Coerced	24	5.403	1.688	<i>F</i> (1,65) 0.487, <i>p</i> =0.488
Not Coerced	43	5.904	3.275	
Partnership				
Coerced	24	5.292	1.951	<i>F</i> (1,64) 0.103, <i>p</i> =0.750
Not Coerced	42	5.464	2.186	
Treatment Confidence				
Coerced	24	6.403	4.145	<i>F</i> (1,65) 1.105, <i>p</i> =0.297
Not Coerced	43	7.781	5.617	
Openness				
Coerced	24	4.565	1.4	<i>F</i> (1,65) 6.309, <i>p</i> =0.015
Not Coerced	43	5.386	1.215	
Initiative				
Coerced	24	6.385	12.55	<i>F</i> (1,65) 0.545, <i>p</i> =0.463
Not Coerced	43	9.903	15.312	

Table O.12

Differences in substance use at 15 weeks for MERIT vs Counselling/Cannabis clients.

Substance Type	Participant Group	N	Mean	Std. Deviation	F
Alcohol	Counselling / cannabis	50	2.840	3.676	$F(1,54)0.023$ $p=0.880$
	MERIT	6	3.075	2.498	
Cannabis	Counselling / cannabis	47	5.150	8.648	$F(1,51)2.080,$ $p=0.155$
	MERIT	6	0	0	
Heroin	Counselling / cannabis	47	0	0	---
	MERIT	6	0	0	
Other Opiates	Counselling / cannabis	47	0.851	5.835	$F(1,51)0.126,$ $p=0.725$
	MERIT	6	0	0	
Methamphetamines	Counselling / cannabis	47	0.055	0.240	$F(1,51)0.307,$ $p=0.582$
	MERIT	6	0	0	
Cocaine	Counselling / cannabis	47	0.240	0	---
	MERIT	6	0	0	
Tranquilisers	Counselling / cannabis	48	0	0.433	$F(1,51)0.143,$ $p=0.707$
	MERIT	6	0	0	
Barbiturates	Counselling / cannabis	47	0	0	---
	MERIT	6	0	0	
Hallucinogens	Counselling / cannabis	47	0.003	0.017	$F(1,51)0.211,$ $p=0.648$
	MERIT	6	0	0	
Inhalants	Counselling / cannabis	47	0	0	---
	MERIT	6	0	0	
Tobacco	Counselling / cannabis	50	14.058	10.908	$F(1,54)3.143,$ $p=0.082$
	MERIT	6	5.197	7.351	

Table O.13

The relationship between coercion (coerced vs not coerced) and substance use at 15 weeks.

Substance Type	Participant Group	N	Mean	Std. Deviation	F
Alcohol	Not Coerced	38	2.794	3.924	$F(1,54)0.047$ $p=0.829$
	Coerced	18	3.016	2.695	
Cannabis	Not Coerced	35	4.319	8.209	$F(1,51)0.081$, $p=0.777$
	Coerced	18	5.011	8.690	
Heroin	Not Coerced	35	0	0	---
	Coerced	18	0	0	
Other Opiates	Not Coerced	35	1.143	6.761	$F(1,51)0.509$, $p=0.479$
	Coerced	18	0	0	
Methamphetamines	Not Coerced	35	0.035	0.169	$F(1,51)0.339$, $p=0.563$
	Coerced	18	0.075	0.313	
Cocaine	Not Coerced	35	0	0	---
	Coerced	18	0	0	
Tranquilisers	Not Coerced	36	0.090	0.5	$F(1,52)0.575$, $p=0.452$
	Coerced	18	0	0	
Barbiturates	Not Coerced	35	0	0	---
	Coerced	18	0	0	
Hallucinogens	Not Coerced	35	0.001	0.007	$F(1,51)1.130$, $p=0.293$
	Coerced	18	0.006	0.025	
Inhalants	Not Coerced	35	0	0	---
	Coerced	18	0	0	
Tobacco	Not Coerced	35	13.214	11.313	$F(1,54)0.001$, $p=0.977$
	Coerced	18	13.125	2.371	

Appendix P:

Journal of Addictive Behaviors – Submission Confirmation

Journal Submission Confirmation

Received 6th January, 2012. Dear

Sam,

Please find following confirmation of submission of your manuscript for your thesis.

Best of luck with this submission,
Frances

Dr Frances Kay-Lambkin

Research Fellow, National Drug and Alcohol Research Centre Faculty of
Medicine, The University of New South Wales
Randwick Campus, Sydney, 2000

----- Email:
f.kaylambkin@unsw.edu.au
website: <http://ndarc.med.unsw.edu.au>

CRICOS Provider No. (UNSW):00098G

From: ees.addictbeh.0.16562a.24186dc3@eesmail.elsevier.com
[ees.addictbeh.0.16562a.24186dc3@eesmail.elsevier.com] on behalf of Addictive Behaviors
[millerpm@musc.edu]
Sent: Friday, 6 January 2012 2:15 PM To:
Frances Kay-Lambkin
Subject: Submission Confirmation

Dear Dr Kay-Lambkin,

Your submission entitled "To enforce or engage: The relationship between coercion, treatment motivation and therapeutic alliance within community-based drug and alcohol clients." has been received by Addictive Behaviors

You may check on the progress of your paper by logging on to the Elsevier Editorial System as an author. The URL is <http://ees.elsevier.com/addictbeh/>.

Your username is: FKay-Lambkin-697

If you need to retrieve password details, please go to:
http://ees.elsevier.com/addictbeh/automail_query.asp

Your manuscript will be given a reference number once an Editor has been assigned. Thank

you for submitting your work to this journal.

Kind regards,

Elsevier Editorial System
Addictive Behaviors

For further assistance, please visit our customer support site at <http://support.elsevier.com>. Here you can search for solutions on a range of topics, find answers to frequently asked questions and learn more about EES via interactive tutorials. You will also find our 24/7 support contact details should you need any further assistance from one of our customer support representatives.

Appendix Q:

Journal of Addictive Behaviors – Guidelines for Authors

ADDICTIVE BEHAVIORS

An International Journal



AUTHOR INFORMATION PACK

TABLE OF CONTENTS

- **Description**
- **Audience**
- **Impact Factor**
- **Abstracting and Indexing**
- **Editorial Board**
- **Guide for Authors**

p.1 p.1 p.1 p.2 p.2 p.3

ISSN: 0306-4603

DESCRIPTION

Addictive Behaviors is an international, peer-reviewed scientific journal publishing human research on substance abuse. The journal specifically focuses on studies related to the abuse of alcohol drugs and nicotine. Articles represent interdisciplinary endeavors with research in such fields as psychology, psychiatry, epidemiology, medicine, pharmacology and neuroscience. While theoretical orientations are diverse, the emphasis of the journal is primarily empirical. That is, sound experimental design combined with valid, reliable assessment and evaluation procedures are a requisite for acceptance. Uncontrolled clinical demonstrations and case studies are not accepted for publication. Priority is given to the publication of research that evaluates behavioral and/or pharmacological treatment or prevention interventions. In addition, studies of the functional relationships between substance use and any one of a combination of social, emotional, cognitive, environmental, and attitudinal factors are encouraged. Studies that clearly contribute to current knowledge of the etiology, prevention and/ or treatment of substance abuse are given priority. Research on the epidemiology of substance use is also published. A limited number of reviews are published.

Related Product

[Eating Behaviors](#) An International Journal

AUDIENCE

Psychiatrists, psychologists, pharmacologists, sociologists, social workers.

ABSTRACTING AND INDEXING

BIOSIS

Behavioral Medicine Abstracts
 Current Contents
 Current Contents/Social & Behavioral Sciences
 EMBASE
 Elsevier BIOBASE
 Health and Safety Science Abstracts Higher Education Abstracts MEDLINE®
 Nutrition Abstracts PASCAL/CNRS Pollution Abstracts
 PsycINFO Psychological Abstracts
 Psych Per Con
 Research Alert
 Safety Science Abstracts
 Scopus
 Social Sciences Citation Index
 TOXIBASE Toxicology
 Abstracts

EDITORIAL BOARD

Editor

Peter Miller, Professor of Psychiatry and Behavioral Sciences, Ctr. for Drug and Alcohol Programs, Medical University of South Carolina (MUSC), P.O. Box 250861 / 67 President Street, Charleston, SC 29425, USA,
 Fax:

+(1) (0) (843) 792-7353, **Email:** millerpm@musc.edu

Associate Editors

Arthur Blume, Department of Psychology VCLS 208L, Washington State University, 14204 NE Salmon Creek

Avenue, Vancouver, WA 98686, USA

Jason Connor, Discipline of Psychiatry, University of Queensland, Royal Brisbane and Women's Hospital, Brisbane, Herston 4029, Australia

Editorial Board

V. Adesso, University of Wisconsin-Milwaukee, Milwaukee, WI, USA

S. Ball, Yale University School of Medicine, West Haven, CT, USA

A. Bellack, University of Maryland, Baltimore, MD, USA

M. Bradizza, State University of New York (SUNY) at Buffalo, Buffalo, NY, USA

K. Carey, Syracuse University, Syracuse, NY, USA

A. Dijkstra, Rijksuniversiteit Groningen, Groningen, Netherlands

K. Gotestam, Trondheim Universitet, Trondheim, Norway

D. Haaga Ph.D., American University, Washington, DC, USA

R. Hodgson, Landsdowne Hospital, Cardiff, UK

A. Kelly, University of Queensland, Brisbane, QLD, Australia

H. Kleber, Columbia University, New York, NY, USA

R. Klesges, Memphis State University, Memphis, TN, USA

E.M. Krupitsky, St Petersburg State Pavlov Medical University, St. Petersburg, Russian Federation

D.J. Kupfer, University of Pittsburgh, Pittsburgh, PA, USA

C. Lieber, Mount Sinai School of Medicine, New York, NY, USA

G. Ma, Temple University, Philadelphia, PA, USA

O. Pomerleau, University of Michigan, Ann Arbor, MI, USA

S. Rachman, University of British Columbia, Vancouver, BC, Canada

S. Schinke, Columbia University, New York, NY, USA

L. Sobell, Nova Southeastern University, Ft. Lauderdale, USA

M. Sobell, Nova Southeastern University, Ft. Lauderdale, USA

GUIDE FOR AUTHORS

Types of Paper

Original Articles, **Reviews** and **Short Communications** are accepted. Manuscripts may be submitted as Short Communications which are no longer than 2000 words plus references and illustrations.

Illustrations should be limited to a total of no more than 2 (e.g., 2 figures or 2 tables or 1 figure and 1 table).

Page charges

This journal has no page charges.

BEFORE YOU BEGIN

Ethics in publishing

For information on Ethics in publishing and Ethical guidelines for journal publication see <http://www.elsevier.com/publishingethics> and <http://www.elsevier.com/ethicalguidelines>.

Conflict of interest

All authors are requested to disclose any actual or potential conflict of interest including any financial, personal or other relationships with other people or organizations within three years of beginning the submitted work that could inappropriately influence, or be perceived to influence, their work. See also <http://www.elsevier.com/conflictsofinterest>.

Submission declaration

Submission of an article implies that the work described has not been published previously (except in the form of an abstract or as part of a published lecture or academic thesis), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere including electronically in the same form, in English or in any other language, without the written consent of the copyright-holder.

Changes to authorship

This policy concerns the addition, deletion, or rearrangement of author names in the authorship of accepted manuscripts:

Before the accepted manuscript is published in an online issue: Requests to add or remove an author, or to rearrange the author names, must be sent to the Journal Manager from the corresponding author of the accepted manuscript and must include: (a) the reason the name should be added or removed, or the author names rearranged and (b) written confirmation (e-mail, fax, letter) from all authors that they agree with the addition, removal or rearrangement. In the case of addition or removal of authors, this includes confirmation from the author being added or removed. Requests that are not sent by the corresponding author will be forwarded by the Journal Manager to the corresponding author, who must follow the procedure as described above. Note that: (1) Journal Managers will inform the Journal Editors of any such requests and (2) publication of the accepted manuscript in an online issue is suspended until authorship has been agreed.

After the accepted manuscript is published in an online issue: Any requests to add, delete, or rearrange author names in an article published in an online issue will follow the same policies as noted above and result in a corrigendum.

Author Disclosure

Authors must provide three mandatory and one optional author disclosure statements. These statements should be submitted as one separate document and not included as part of the manuscript. Author disclosures will be automatically incorporated into the PDF builder of the online submission system. They will appear in the journal article if the manuscript is accepted.

The four statements of the author disclosure document are described below. Statements should not be numbered. Headings (i.e., Role of Funding Sources, Contributors, Conflict of Interest, Acknowledgements) should be in bold with no white space between the heading and the text. Font size should be the same as that used for references.

Statement 1: Role of Funding Sources

Authors must identify who provided financial support for the conduct of the research and/or preparation of the manuscript and to briefly describe the role (if any) of the funding sponsor in study design, collection, analysis, or interpretation of data, writing the manuscript, and the decision to submit the manuscript for publication. If the funding source had no such involvement, the authors should so state.

Example: Funding for this study was provided by NIAAA Grant R01-AA123456. NIAAA had no role in the study design, collection, analysis or interpretation of the data, writing the manuscript, or the decision to submit the paper for publication.

Statement 2: Contributors

Authors must declare their individual contributions to the manuscript. All authors must have materially participated in the research and/or the manuscript preparation. Roles for each author should be described. The disclosure must also clearly state and verify that all authors have approved the final manuscript.

Example: Authors A and B designed the study and wrote the protocol. Author C conducted literature searches and provided summaries of previous research studies. Author D conducted the statistical analysis. Author B wrote the first draft of the manuscript and all authors contributed to and have approved the final manuscript.

Statement 3: Conflict of Interest

All authors must disclose any actual or potential conflict of interest. Conflict of interest is defined as any financial or personal relationships with individuals or organizations, occurring within three (3) years of beginning the submitted work, which could inappropriately influence, or be perceived to have influenced the submitted research manuscript. Potential conflict of interest would include employment, consultancies, stock ownership (except personal investments equal to the lesser of one percent (1%) of total personal investments or USD\$5000), honoraria, paid expert testimony, patent applications, registrations, and grants. If there are no conflicts of interest by any author, it should state that there are none.

Example: Author B is a paid consultant for XYZ pharmaceutical company. All other authors declare that they have no conflicts of interest.

Statement 4: Acknowledgements (optional)

Authors may provide Acknowledgements which will be published in a separate section along with the manuscript. If there are no Acknowledgements, there should be no heading or acknowledgement statement.

Example: The authors wish to thank Ms. A who assisted in the proof-reading of the manuscript.

Copyright

Upon acceptance of an article, authors will be asked to complete a 'Journal Publishing Agreement' (for more information on this and copyright see <http://www.elsevier.com/copyright>). Acceptance of the agreement will ensure the widest possible dissemination of information. An e-mail will be sent to the corresponding author confirming receipt of the manuscript together with a 'Journal Publishing Agreement' form or a link to the online version of this agreement.

Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. Permission of the Publisher is required for resale or distribution outside the institution and for all other derivative works, including compilations and translations (please consult <http://www.elsevier.com/permissions>). If excerpts from other copyrighted works are included, the author(s) must obtain written permission from the copyright owners and credit the source(s) in the article. Elsevier has preprinted forms for use by authors in these cases: please consult <http://www.elsevier.com/permissions>.

Retained author rights

As an author you (or your employer or institution) retain certain rights; for details you are referred to: <http://www.elsevier.com/authorsrights>.

Role of the funding source

You are requested to identify who provided financial support for the conduct of the research and/or preparation of the article and to briefly describe the role of the sponsor(s), if any, in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication. If the funding source(s) had no such involvement then this should be stated. Please see <http://www.elsevier.com/funding>.

Funding body agreements and policies

Elsevier has established agreements and developed policies to allow authors whose articles appear in journals published by Elsevier, to comply with potential manuscript archiving requirements as specified as conditions of their grant awards. To learn more about existing agreements and policies please visit <http://www.elsevier.com/fundingbodies>.

Open access

This journal offers you the option of making your article freely available to all via the ScienceDirect platform. To prevent any conflict of interest, you can only make this choice after receiving notification that your article has been accepted for publication. The fee of \$3,000 excludes taxes and other potential author fees such as color charges. In some cases, institutions and funding bodies have entered into agreement with Elsevier to meet these fees on behalf of their authors. Details of these agreements are available at <http://www.elsevier.com/fundingbodies>. Authors of accepted articles, who wish to take advantage of this option, should complete and submit the order form (available at <http://www.elsevier.com/locate/openaccessform.pdf>). Whatever access option you choose, you retain many rights as an author, including the right to post a revised personal version of your article on your own website. More information can be found here: <http://www.elsevier.com/authorsrights>.

Language and language services

Please write your text in good English (American or British usage is accepted, but not a mixture of these). Authors who require information about language editing and copyediting services pre- and post-submission please visit <http://webshop.elsevier.com/languageservices> or our customer support site at <http://support.elsevier.com> for more information.

Patient details

Unless you have written permission from the patient (or, where applicable, the next of kin), the personal details of any patient included in any part of the article and in any supplementary materials (including all illustrations and videos) must be removed before submission. For further information see <http://www.elsevier.com/patientphotographs>.

Submission

Submission to this journal proceeds totally online and you will be guided stepwise through the creation and uploading of your files. The system automatically converts source files to a single PDF file of the article, which is used in the peer-review process. Please note that even though manuscript source files are converted to PDF files at submission for the review process, these source files are needed for further processing after acceptance. All correspondence, including notification of the Editor's decision and requests for revision, takes place by e-mail removing the need for a paper trail.

Additional Information

Questions about the appropriateness of a manuscript for *Addictive Behaviors* should be directed (prior to submission) to the Editor-in-Chief, Dr. Peter Miller, at millerpm@muscd.edu.

PREPARATION

Use of wordprocessing software

It is important that the file be saved in the native format of the wordprocessor used. The text should be in single-column format. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. In particular, do not use the wordprocessor's options to justify text or to hyphenate words. However, do use bold face, italics, subscripts, superscripts etc. When preparing tables, if you are using a table grid, use only one grid for each individual table and not a grid for each row. If no grid is used, use tabs, not spaces, to align columns. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier:

<http://www.elsevier.com/guidepublication>). Note that source

files of figures, tables and text graphics will be required whether or not you embed your figures in the text. See also the section on Electronic artwork.

To avoid unnecessary errors you are strongly advised to use the 'spell-check' and 'grammar-check' functions of your wordprocessor.

Article structure

Subdivision - numbered sections

Divide your article into clearly defined and numbered sections. Subsections should be numbered 1.1 (then 1.1.1, 1.1.2, ...), 1.2, etc. (the abstract is not included in section numbering). Use this numbering also for internal cross-referencing: do not just refer to 'the text'. Any subsection may be given a brief heading. Each heading should appear on its own separate line.

Introduction

State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results.

Material and methods

Provide sufficient detail to allow the work to be reproduced. Methods already published should be indicated by a reference: only relevant modifications should be described.

Theory/calculation

A Theory section should extend, not repeat, the background to the article already dealt with in the Introduction and lay the foundation for further work. In contrast, a Calculation section represents a practical development from a theoretical basis.

Results

Results should be clear and concise.

Discussion

This should explore the significance of the results of the work, not repeat them. A combined Results and Discussion section is often appropriate. Avoid extensive citations and discussion of published literature.

Conclusions

The main conclusions of the study may be presented in a short Conclusions section, which may stand alone or form a subsection of a Discussion or Results and Discussion section.

Appendices

If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

Essential title page information

- **Title.** Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible.
- **Author names and affiliations.** Where the family name may be ambiguous (e.g., a double name), please indicate this clearly. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-case superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name and, if available, the e-mail address of each author.
- **Corresponding author.** Clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication. **Ensure that telephone and fax numbers (with country and area code) are provided in addition to the e-mail address and the complete postal address. Contact details must be kept up to date by the corresponding author.**
- **Present/permanent address.** If an author has moved since the work described in the article was done, or was visiting at the time, a 'Present address' (or 'Permanent address') may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

Abstract

A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

Graphical abstract

A Graphical abstract is optional and should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership online. Authors must provide images that clearly represent the work described in the article. Graphical abstracts should be submitted as a separate file in the online submission system. Image size: Please provide an image with a minimum of 531 × 1328 pixels (h × w) or proportionally more. The image should be readable at a size of 5 × 13 cm using a regular screen resolution of 96 dpi. Preferred file types: TIFF, EPS, PDF or MS Office files. See <http://www.elsevier.com/graphicalabstracts> for examples.

Authors can make use of Elsevier's Illustration and Enhancement service to ensure the best presentation of their images also in accordance with all technical requirements: [Illustration Service](#).

Highlights

Highlights are mandatory for this journal. They consist of a short collection of bullet points that convey the core findings of the article and should be submitted in a separate file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point). See <http://www.elsevier.com/highlights> for examples.

Keywords

Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

Abbreviations

Define abbreviations that are not standard in this field in a footnote to be placed on the first page of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first mention there, as well as in the footnote. Ensure consistency of abbreviations throughout the article.

Acknowledgements

Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

Math formulae

Present simple formulae in the line of normal text where possible and use the solidus (/) instead of a horizontal line for small fractional terms, e.g., X/Y. In principle, variables are to be presented in italics. Powers of e are often more conveniently denoted by exp. Number consecutively any equations that have to be displayed separately from the text (if referred to explicitly in the text).

Footnotes

Footnotes should be used sparingly. Number them consecutively throughout the article, using superscript Arabic numbers. Many wordprocessors build footnotes into the text, and this feature may be used. Should this not be the case, indicate the position of footnotes in the text and present the footnotes themselves separately at the end of the article. Do not include footnotes in the Reference list. *Table footnotes* Indicate each footnote in a table with a superscript lowercase letter.

Artwork *Electronic artwork General points*

- Make sure you use uniform lettering and sizing of your original artwork.
- Save text in illustrations as 'graphics' or enclose the font.
- Only use the following fonts in your illustrations: Arial, Courier, Times, Symbol.
- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
- Provide captions to illustrations separately.
- Produce images near to the desired size of the printed version.
- Submit each figure as a separate file.

A detailed guide on electronic artwork is available on our website:

<http://www.elsevier.com/artworkinstructions>

You are urged to visit this site; some excerpts from the detailed information are given here.

Formats

Regardless of the application used, when your electronic artwork is finalised, please 'save as' or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):

EPS: Vector drawings. Embed the font or save the text as 'graphics'.

TIFF: Color or grayscale photographs (halftones): always use a minimum of 300 dpi. TIFF: Bitmapped line drawings: use a minimum of 1000 dpi.

TIFF: Combinations bitmapped line/half-tone (color or grayscale): a minimum of 500 dpi is required. If your electronic artwork is created in a Microsoft Office application (Word, PowerPoint, Excel) then please supply 'as is'.

Please do not:

- Supply files that are optimised for screen use (e.g., GIF, BMP, PICT, WPG); the resolution is too low;
- Supply files that are too low in resolution;
- Submit graphics that are disproportionately large for the content.

Color artwork

Please make sure that artwork files are in an acceptable format (TIFF, EPS or MS Office files) and with the correct resolution. If, together with your accepted article, you submit usable color figures then Elsevier will ensure, at no additional charge, that these figures will appear in color on the Web (e.g., ScienceDirect and other sites) regardless of whether or not these illustrations are reproduced in color in

the printed version. **For color reproduction in print, you will receive information regarding the costs from Elsevier after receipt of your accepted article.** Please indicate your preference for color: in print or on the Web only. For further information on the preparation of electronic artwork, please see <http://www.elsevier.com/artworkinstructions>.

Please note: Because of technical complications which can arise by converting color figures to 'gray scale' (for the printed version should you not opt for color in print) please submit in addition usable black and white versions of all the color illustrations.

Figure captions

Ensure that each illustration has a caption. Supply captions separately, not attached to the figure. A caption should comprise a brief title (**not** on the figure itself) and a description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used.

Tables

Number tables consecutively in accordance with their appearance in the text. Place footnotes to tables below the table body and indicate them with superscript lowercase letters. Avoid vertical rules. Be sparing in the use of tables and ensure that the data presented in tables do not duplicate results described elsewhere in the article.

References

Responsibility for the accuracy of bibliographic citations lies entirely with the authors.

Citation in text

Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either 'Unpublished results' or 'Personal communication'. Citation of a reference as 'in press' implies that the item has been accepted for publication.

Web references

As a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.

References in a special issue

Please ensure that the words 'this issue' are added to any references in the list (and any citations in the text) to other articles in the same Special Issue.

Reference management software

This journal has standard templates available in key reference management packages EndNote (<http://www.endnote.com/support/enstyles.asp>) and Reference Manager (<http://refman.com/support/rmstyles.asp>). Using plug-ins to wordprocessing packages, authors only need to select the appropriate journal template when preparing their article and the list of references and citations to these will be formatted according to the journal style which is described below.

Reference style

Text: Citations in the text should follow the referencing style used by the American Psychological Association. You are referred to the Publication Manual of the American Psychological Association, Sixth Edition, ISBN 978-1-4338-0561-5, copies of which may be ordered from <http://books.apa.org/books.cfm?id=4200067> or APA Order Dept., P.O.B. 2710, Hyattsville, MD 20784, USA or APA, 3 Henrietta Street, London, WC3E 8LU, UK. Details concerning this referencing style can also be found at <http://linguistics.byu.edu/faculty/henrichsenl/apa/apa01.html>. *List:* references should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters 'a', 'b', 'c', etc., placed after the year of publication.

Examples:

Reference to a journal publication:

Van der Geer, J., Hanraads, J. A. J., & Lupton, R. A. (2010). The art of writing a scientific article. *Journal of Scientific Communications*, 163, 51–59. Reference to a book:

Strunk, W., Jr., & White, E. B. (1979). *The elements of style*. (4th ed.). New York: Longman, (Chapter

4).

Reference to a chapter in an edited book:

Mettam, G. R., & Adams, L. B. (2009). How to prepare an electronic version of your article. In B. S. Jones, & R. Z. Smith (Eds.), *Introduction to the electronic age* (pp. 281–304). New York: E-Publishing Inc.

Journal abbreviations source

Journal names should be abbreviated according to

Index Medicus journal abbreviations: <http://www.nlm.nih.gov/tsd/serials/lji.html>; List of title word abbreviations: <http://www.issn.org/2-22661-LTWA-online.php>; CAS (Chemical Abstracts Service): <http://www.cas.org/sent.html>.

Video data

Elsevier accepts video material and animation sequences to support and enhance your scientific research. Authors who have video or animation files that they wish to submit with their article are strongly encouraged to include these within the body of the article. This can be done in the same way as a figure or table by referring to the video or animation content and noting in the body text where it should be placed. All submitted files should be properly labeled so that they directly relate to the video file's content. In order to ensure that your video or animation material is directly usable, please provide the files in one of our recommended file formats with a preferred maximum size of 50 MB. Video and animation files supplied will be published online in the electronic version of your article in Elsevier Web products, including ScienceDirect: <http://www.sciencedirect.com>. Please supply 'stills' with your files: you can choose any frame from the video or animation or make a separate image. These will be used instead of standard icons and will personalize the link to your video data. For more detailed instructions please visit our video instruction pages at <http://www.elsevier.com/artworkinstructions>. Note: since video and animation cannot be embedded in the print version of the journal, please provide text for both the electronic and the print version for the portions of the article that refer to this content.

Supplementary data

Elsevier accepts electronic supplementary material to support and enhance your scientific research. Supplementary files offer the author additional possibilities to publish supporting applications, high-resolution images, background datasets, sound clips and more. Supplementary files supplied will be published online alongside the electronic version of your article in Elsevier Web products, including ScienceDirect: <http://www.sciencedirect.com>. In order to ensure that your submitted material is directly usable, please provide the data in one of our recommended file formats. Authors should submit the material in electronic format together with the article and supply a concise and descriptive caption for each file. For more detailed instructions please visit our artwork instruction pages at <http://www.elsevier.com/artworkinstructions>.

Submission checklist

The following list will be useful during the final checking of an article prior to sending it to the journal for review. Please consult this Guide for Authors for further details of any item.

Ensure that the following items are present:

One author has been designated as the corresponding author with contact details:

- E-mail address
- Full postal address
- Telephone and fax numbers

All necessary files have been uploaded, and contain:

- Keywords
- All figure captions
- All tables (including title, description, footnotes) Further considerations
- Manuscript has been 'spell-checked' and 'grammar-checked'
- References are in the correct format for this journal
- All references mentioned in the Reference list are cited in the text, and vice versa
- Permission has been obtained for use of copyrighted material from other sources (including the Web)
- Color figures are clearly marked as being intended for color reproduction on the Web (free of charge) and in print, or to be reproduced in color on the Web (free of charge) and in black-and-white in print
- If only color on the Web is required, black-and-white versions of the figures are also supplied for printing purposes

For any further information please visit our customer support site at <http://support.elsevier.com>.

AFTER ACCEPTANCE

Use of the Digital Object Identifier

The Digital Object Identifier (DOI) may be used to cite and link to electronic documents. The DOI consists of a unique alpha-numeric character string which is assigned to a document by the publisher upon the initial electronic publication. The assigned DOI never changes. Therefore, it is an ideal medium for citing a document, particularly 'Articles in press' because they have not yet received their full bibliographic information. The correct format for citing a DOI is shown as follows (example taken from a document in the journal *Physics Letters B*):

doi:10.1016/j.physletb.2010.09.059

When you use the DOI to create URL hyperlinks to documents on the web, the DOIs are guaranteed never to change.

Proofs

One set of page proofs (as PDF files) will be sent by e-mail to the corresponding author (if we do not have an e-mail address then paper proofs will be sent by post) or, a link will be provided in the e-mail so that authors can download the files themselves. Elsevier now provides authors with PDF proofs which can be annotated; for this you will need to download Adobe Reader version 7 (or higher) available free from <http://get.adobe.com/reader>. Instructions on how to annotate PDF files will accompany the proofs (also given online). The exact system requirements are given at the Adobe site:

<http://www.adobe.com/products/reader/tech-specs.html>.

If you do not wish to use the PDF annotations function, you may list the corrections (including replies to the Query Form) and return them to Elsevier in an e-mail. Please list your corrections quoting line number. If, for any reason, this is not possible, then mark the corrections and any other comments (including replies to the Query Form) on a printout of your proof and return by fax, or scan the pages and e-mail, or by post. Please use this proof only for checking the typesetting, editing, completeness and correctness of the text, tables and figures. Significant changes to the article as accepted for publication will only be considered at this stage with permission from the Editor. We will do everything possible to get your article published quickly and accurately—please let us have all your corrections within 48 hours. It is important to ensure that all corrections are sent back to us in one communication: please check carefully before replying, as inclusion of any subsequent corrections cannot be guaranteed. Proofreading is solely your responsibility. Note that Elsevier may proceed with the publication of your article if no response is received.

Offprints

The corresponding author, at no cost, will be provided with a PDF file of the article via e-mail. For an extra charge, paper offprints can be ordered via the offprint order form which is sent once the article is accepted for publication. The PDF file is a watermarked version of the published article and includes a cover sheet with the journal cover image and a disclaimer outlining the terms and conditions of use.

NIH voluntary posting policy

Elsevier facilitates author response to the US National Institutes of Health (NIH) voluntary posting request (referred to as the NIH "Public Access Policy", see <http://www.nih.gov/about/publicaccess/index.htm>) by posting the peer-reviewed author's manuscript directly to PubMed Central on request from the author, 12 months after formal publication. Upon notification from Elsevier of acceptance, we will ask you to confirm via e-mail (by e-mailing us at NIHauthorrequest@elsevier.com) that your work has received NIH funding and that you intend to respond to the NIH policy request, along with your NIH award number to facilitate processing. Upon such confirmation, Elsevier will submit to PubMed Central on your behalf a version of your manuscript that will include peer-review comments, for posting 12 months after formal publication. This will ensure that you will have responded fully to the NIH request policy. There will be no need for you to post your manuscript directly with PubMed Central, and any such posting is prohibited.

AUTHOR INQUIRIES

For inquiries relating to the submission of articles (including electronic submission) please visit this journal's homepage. Contact details for questions arising after acceptance of an article, especially those relating to proofs, will be provided by the publisher. You can track accepted articles at <http://www.elsevier.com/trackarticle>. You can also check our Author FAQs (<http://www.elsevier.com/authorFAQ>) and/or contact Customer Support via <http://support.elsevier.com>.

© Copyright 2012 Elsevier |
<http://www.elsevier.com>