

What difference does treatment make? Developing a qualitative measure of young people's progress in residential rehabilitation: final report



Lynn Roarty
Helen Wildy
Sherry Siggers
Mandy Wilson
Martyn Symons



Preventing harmful drug use in Australia

The National Drug Research Institute at Curtin University is supported by funding from the Australian Government under the Substance Misuse Prevention and Service Improvement Grants Fund

WHO Collaborating Centre for the Prevention of Alcohol and Drug Abuse

National Drug Research Institute

Curtin University
GPO Box U1987, Perth, Western Australia, 6845

Telephone: (08) 9266 1600
Facsimile: (08) 9266 1611
Email: ndri@curtin.edu.au
Website: ndri.curtin.edu.au

Corresponding Author:

Lynn Roarty
National Drug Research Institute
Curtin University
GPO Box U1987, Perth, Western Australia, 6845
Email: l.roarty@curtin.edu.au

CRICOS Provider Code: 00301J (WA), 02637B (NSW)

ISBN 978-0-9873641-5-9

20140008

What difference does treatment make?

**Developing a qualitative measure of young people's progress
in residential rehabilitation**

Final Report

Lynn Roarty, Helen Wildy, Sherry Sagers, Mandy Wilson, Martyn Symons

March 2014

© Copyright, National Drug Research Institute, 2014

Suggested referencing:

Roarty, L., Wildy, H., Saggars, S., Wilson, M., and Symons, M. (2014). What difference does treatment make? Developing a qualitative measure of young people's progress in residential rehabilitation. Final report. National Drug Research Institute, Curtin University, Perth, Western Australia.

Table of contents

Acknowledgements	4
Introduction	5
Research aims.....	17
Methodology	17
Data collection	19
Results.....	21
Analysis	27
Discussion and Conclusion	31
Bibliography	33

Acknowledgements

The researchers express their thanks to the staff and the young people in the four services who participated in this study.

The authors would like to acknowledge the assistance of the research team and associates past and present: Carmen Acosta, Rebecca Clair, Gillian Considine, Stephen Cope, Kathryn Di Nicola, Jo Fildes, Caroline Flew, Sarah Green, Anne Hampshire, Charlie Laidlaw, Tim Marchant, Peta Nordberg and Jody Webb (Mission Australia); Malcolm Brunton, Jagdish Dua, Ronan O'Connor, Andrew Walden, Lisa Webb and Sam Wilson (Ted Noffs Foundation); Kate Conigrave (Sydney South West Area Health Service); Allan Colthart (Drug and Alcohol Office, WA Health); Sitharthan Thiagarajan (University of Western Sydney); Tricia O'Riordan and Susie Thompson (NSW Health), and Joanne Faulkner (UWA), who also translated the design into both an electronic (eMJM) and a paper-based (MJM) practical tool.

This research was funded by an Australian Research Council (ARC) Linkage grant (LP100100266), with further financial and in-kind support provided by Mission Australia and the Ted Noffs Foundation. The Sydney South West Area Health Service, the WA Health Drug and Alcohol Office, NSW Health, the University of Western Australia, and the University of Western Sydney, provided in-kind support.

SYDNEY SOUTH WEST
AREA HEALTH SERVICE
NSW HEALTH



Government of **Western Australia**
Drug and Alcohol Office

NSW HEALTH



THE UNIVERSITY OF
WESTERN AUSTRALIA
Achieving International Excellence



University of
Western Sydney
Bringing knowledge to life

Introduction

Results from outcome measures for young people in residential rehabilitation for drug and alcohol issues are equivocal. The most frequently used indicators for predicting success in treatment are retention and completion (K. Winters, Stinchfield, Latimer, & Lee, 2007). Some researchers argue that progress made *within* treatment may be more predictive of positive outcomes (Toumbourou, Hamilton, & Fallon, 1998), and this may especially be the case with young people in treatment (Williams & Chang, 2000).

Numerous outcome measurement tools exist for use in measuring a range of factors relevant to issues around substance misuse (Deady, 2009). While some of these measures have been adapted for use with adolescents, many of them are time consuming and potentially alienating for young people. Outcome measurement tools specifically developed for use with adolescents are still relatively scarce.

As well as issues around the particular needs of young people, outcome studies also suffer from problems such as systemic barriers and methodological variation (Butler, et al, 2009). Bell (2007), suggests that a greater investment in large quantitative studies may not provide the best information for service professionals. She suggests instead that outcomes research which works qualitatively could better help staff deal with the variable and diverse nature of the services and the clients they serve.

In this context, this ARC Linkage project was designed to produce a qualitative approach to measuring young people's progress in treatment that is accessible to the alcohol and other drug (AOD) workforce, and generates psychometrically robust quantitative outcome data that is meaningful and useful to practitioners and to the young people themselves.

Young people and alcohol and other drug treatment: A review of the literature

Introduction

Some experimentation with alcohol and drugs in adolescence is considered to be 'relatively' normative in Australian culture (Prior, Sanson, Smart, & Oberklaid, 2000, p. 51). Indeed, drug use has been recognised as 'an important source of status and recreation for young people' (Fletcher, Calafat, Pirona, & Olszewski, 2010, p. 361; see also Henderson, Holland, McGrellis, Sharpe, & Thompson, 2007), and for most young people such recreational use will not lead to dependence (Gowing, Proudfoot, Henry-Edwards, & Teesson, 2001, p. 7). Differential vulnerability to problematic substance misuse is influenced by the protective or risk-producing character of a wide range of individual and systemic factors (Loxley, Toumbourou, & Stockwell, 2004; Prior et al., 2000; Spooner, 1999). These include personal and biological attributes, including ethnicity and gender; family life and relationships; trauma; academic and social functioning, and societal, environmental and developmental factors (see Bukstein & Winters, 2004; Dodd & Saggars, 2006; Gowing et al., 2001; Loxley et al., 2004; National Treatment Agency for Substance Misuse, 2009; Spooner, 1999; T. Stockwell et al., 2004; Strada, Donohue, & Lefforge, 2006).

The probability of harm to young people with substance misuse issues is well recognised in the literature (Bukstein & Winters, 2004; Delaney, Broome, Flynn, & Fletcher, 2001; Fletcher et al., 2010; T. R. Stockwell, Gruenewald, Toumbourou, & Loxley, 2005). These young people are more likely to face significant negative health and life events such as depression and anxiety, post-traumatic stress disorder (PTSD), violence (including sex-related violence) and trauma, suicidal ideation, difficulties with schooling, and family dysfunction (Ford II et al., 2007; Joshi, Grella, & Hser, 2001; Prior et al., 2000; Staiger, Melville, Hides, Kambouropoulos, & Lubman, 2009). They are also less likely to obtain or retain stable employment (Gray & Saggars, 2005; Wilson, Saggars, & Wildy, 2008). As well as these personal costs, this results in economic and social costs (Australian Institute of Health and Welfare, 2005; Chassin, Knight, Vargas-Chanes, Losoya, & Naranjo, 2009; Collins & Lapsley, 2002; Rounds-Bryant, Kristiansen, Fairbank, & Hubbard, 1998), and represents the potential loss to society of the unique contributions of these young people. Substance misuse among young people is therefore a matter of considerable concern.

Framework of approaches to alcohol and other drug use

Australia's approach to alcohol and other drug use is encapsulated in the National Drug Strategy (NDS) 2010-2015, and in the substance-specific strategies that have been developed from this national framework. Since 1985, the basis of Australia's drug strategy has been a harm minimisation approach, which encompasses a balance between the three pillars of reduced demand, supply, and related harms from both licit and illicit drugs. An independent evaluation of the strategy has found that the harm minimisation approach is sound; however, drug use continues to result in significant harms (Ministerial Council on Drug Strategy, 2004).

Harm minimisation continues as the overarching approach taken in the NDS 2010-2015. This next phase has a focus on strengthening the coordination of drug strategy policies with related policy areas such as “social inclusion, health and hospitals reform, indigenous disadvantage, early childhood and family, homelessness, employment and preventative health” (Intergovernmental Committee on Drugs National Drug Strategy Development Working Group, 2009, p. 7). The NDS 2010-2015 commits to:

- building workforce capacity;
- evidence-based and evidence-informed practice, innovation and evaluation;
- performance measurement, and
- building partnerships across sectors (Ministerial Council on Drug Strategy, 2011, p. ii).

What works in treatment?

There are a number of effective treatment options for drug and alcohol misuse. However, what works in treatment has been shown to vary for different kinds and levels of dependence. Treatments for illicit drug misuse include pharmacotherapies, detoxification, counselling (including brief interventions, CBT, and motivational interviewing), and psychosocial interventions such as residential rehabilitation (Loxley et al., 2004). The success of these treatments is dependent upon a range of factors including the kind of drug problem and type of drug, and the social and psychological situation of the individual client (Loxley et al., 2004, p. 162).

The 8-year multi-site US study Project Match showed positive results for treatment for alcohol misuse from 12-step facilitation therapy, motivational enhancement, and supportive psychotherapy. There was no clear superiority of one method over another, with the exception of some evidence to suggest that those with more severe dependence did better when treated with 12-step facilitation (Commentaries, 1999; Loxley et al., 2004; see also Project MATCH Research Group, 1997a; Project MATCH Research Group, 1997b, 1998).

Research by Satre and colleagues (2004) suggests that for adults (aged between 18-77 years) in a managed care program, the most significant predictors of abstinence were longer stays in treatment, and not having family members or friends who encouraged the use of drugs or alcohol (p. 1294). These factors also appear to be related to positive outcomes for adolescents, with existing evidence suggesting also that positive outcomes are associated with longer stays in treatment for all age groups, and that any time in treatment is better than none (Williams & Chang, 2000). Chung & Maisto (2009) note that for adolescents in particular, treatment itself seems to be a key ingredient in "enhancing and maintaining motivation to reduce substance use" (p. 179), while Colby points out that a treatment model which has an insistence on total abstinence may actually result in an increase in total harm for young people (Colby, Lee, Lewis-Esquerre, Esposito-Smythers, & Monti, 2004). Other research notes the importance of after care to the continuation of abstinence or reduction in drug and alcohol use and harm minimisation (Godley, Godley, Dennis, Funk, & Passetti, 2006; Pumariega, 2007).

Young people and treatment

In his discussion of family-based therapies for adolescents with drug and alcohol misuse issues, Liddle makes the claim, “Once in the shadows of the adult substance abuse field, the adolescent substance abuse specialty has become a unique, clinically creative, and empirically-based area” (2004, p. 76). However, other contemporary research notes both an historical failure to recognise the unique needs of adolescents (Etheridge, Smith, Rounds-Bryant, & Hubbard, 2001; Flanzer, 2005; Hser et al., 2001), and the ongoing need for dedicated adolescent treatment programs and outcome measures (Hser et al., 2001; John Marsden et al., 1998; SAMHSA, 2004; Szirom, King, & Desmond, 2004; K. C. Winters, 1992). More recent research continues to note a paucity of literature assessing the quality, availability, and effectiveness of adolescent-only treatment programs (American Association of Children's Residential Centers, 2009; Knudsen, 2009; Wagner, 2009).

A range of factors are involved in assessing and responding to the treatment needs, experiences, and outcomes for adolescents with substance misuse issues. These include developmental factors, differing patterns and longevity of use, comorbidity, gender, retention in treatment and the sustainability of outcomes.

Developmental factors

The developmental factors identified in the research literature broadly encompass:

- biological: menarche, hormonal changes, puberty, brain maturation;
- psychological: identity formation, positive/negative affect, self-regulation and cognitive capacity;
- social: sexuality and sexual behaviour, parent-child relationships, peer influences, interpersonal skills; and
- transitional factors: schooling, employment (Wagner, 2008, s342; see also Wagner, 2009).

Each of these factors “influence patterns of risk, patterns of alcohol use, and interactions between patterns of risk and alcohol use” (Wagner, 2008, s339). Adolescence is well-recognised to be a time of transition, most notably through the physical and psychological changes associated with puberty. During adolescence, young people also typically begin to exert more control over their social environment: they seek to establish their independence, separating from parents and moving closer to peers; they begin to act in the world through negotiation and decision-making; and older adolescents commonly begin to move into the adult world through such means as obtaining a licence to drive and undertaking some form of employment (Brown, 2004; Colby et al., 2004; Deas, Riggs, Langenbucher, Goldman, & Brown, 2000; Wagner, 2009). As well as a time of change, for many young people adolescence is also therefore a time of ‘testing the boundaries’, sensation-seeking, and increased vulnerability.

While some earlier research considers that the field of adolescent treatment has had an increased focus on developmental issues (Colby et al., 2004), others, in discussing treatment outcomes for adolescents, note that the field “lags far behind similar

research with adults” (Brown, 2004, p. 44). More recently, Wagner (2008) states that although “the need for research that blends developmental science and treatment outcome research is widely acknowledged, scant information exists about developmentally informed approaches to treatment research with alcohol abusing teens” (s337).

Colby and colleagues stress the need to make treatment approaches meaningful for adolescents by, for example, increasing a focus on individual differences (Colby et al., 2004). Brown (2004) similarly recommends the inclusion of developmental considerations in adolescent treatment outcomes research, suggesting a variety of strategies to recognise the heterogeneity of the young people entering treatment, the likelihood that they will be in crisis at the time of entry, and their sensitivity to confidentiality issues and authoritarian approaches. These include:

- accessible, informal language, both in interpersonal exchanges and in documentation;
- full discussion of confidentiality issues, including disclosure requirements;
- different interviewers for teen-parent pairs;
- low-key focus on behavioural problems;
- recognition and consideration in design of instruments of the possibility of compromised cognitive functioning; and
- the ‘ample’ use of examples of emotional states and use-related problems (pp 39-40).

Gender

The research evidence is equivocal on the effects of gender on substance misuse and treatment outcomes. Colby and colleagues note that males are more likely than females to use alcohol, cigarettes and illicit substances, and in greater quantities (Colby et al., 2004). Some studies have found that females are more likely to have internalising disorders such as depression, whereas males are more likely to have externalising disorders such as ADHD, aggression and conduct disorders (Baker & Purcell, 2005; Latimer, Stone, Voight, Winters, & August, 2002), while others have found no notable differences (Grilo et al., 1998), or no gender effects on levels of externalising behaviours such as aggression (Connor, Doerfler, Toscano, Volungis, & Steingard, 2004; Weis, Whitmarsh, & Wilson, 2005) or on treatment outcomes (T. Chung et al., 2003; Frankfort-Howard & Romm, 2002).

In their paper, Handwerk and colleagues find that there are few studies of the effects of gender on adolescents in residential treatment. They note that those that do exist suffer from a variety of methodological and attitudinal flaws, including inadequate sample sizes, lack of focus on diagnostic improvement, incomplete information, and the treatment of gender as a ‘nuisance variable’ (Handwerk, Clopton, Huefner, Hoff, & Lucas, 2006, p. 313). In their own study of one residential facility – which they have identified as a limitation on the generalisability of results – they find that “at least a subset of female youth are indeed more troubled than their male counterparts” (p. 321).

Other studies have found, similarly, that young women in substance misuse treatment, both within and outside the juvenile justice system, are more likely to have self-harmed, have greater vulnerability to sexual exploitation and to a wider array of health problems, and were less likely to offer or receive support from same-sex individuals within residential settings (Douglas & Plugge, 2006; Reihman, Bluthenthal, Juvonen, & Morral, 2003; Ruiz, Stevens, McKnight, Godley, & Shane, 2005). The conclusion drawn by Handwerk and colleagues (2006, p. 321) that “the lack of knowledge about and attention to gender-based issues in residential treatment is unjustified” appears to have some support in the wider literature.

Comorbidity

Comorbidity of substance misuse and mental health problems is well recognised in the literature as significantly more likely than not, both for adults and for adolescents (ABS, 2010; Tammy Chung & Maisto, 2009; Grella & Stein, 2006; Healey, Peters, Kinderman, McCracken, & Morriss, 2008; Shane, Jasiukaitis, & Green, 2003). Some early studies have found that almost two-thirds of young people in in-patient treatment had a co-existing disorder (Bukstein, Glancy, & Kaminer, 1992). Hall and colleagues (2001) assert that “comorbidity is the rule rather than the exception with mental disorders” (p.15), while Cole & Sacks (2008) state that:

It could be suggested that a person with a substance use problem is at least twice as likely to have a mental illness as those in the general community, and a person with a mental illness is two to three times more likely to have a substance use problem than someone without a mental illness (p. 34).

Poorer treatment outcomes are more likely for those with co-occurring drug and alcohol and mental health issues (George & Krystal, 2000; Goren & Mallick, 2007; Hall et al., 2001; Jane-Llopis & Matytsina, 2006), and this is variously attributed to a number of factors, including the heterogeneous and complex nature of comorbid disorders (Hegarty, 2004), and the separation of services which can lead to fragmented care and the risk of people “fall[ing] down the cracks” (see also Tammy Chung & Maisto, 2009; Department of Health (UK), 2002, Foreword; Rowe, Liddle, Greenbaum, & Henderson, 2004; Tomlinson, Brown, & Abrantes, 2004). Certain comorbid conditions have also been shown to have differing effects on treatment outcomes. For example, young people with a diagnosis of a co-occurring conduct disorder have been found to be less likely to complete treatment, while those with co-occurring mood disorders trended more towards completion (Waldron & Kaminer, 2004).

Patterns and longevity of use

As would be expected, adolescents have relatively short histories of substance misuse. They are, however, more likely than are adults to progress to misuse more rapidly, be poly-substance users, and to binge drink (Brown, 2004; Currie, 2003; Milne, Bell, Lampropoulos, & Towns, 2007; Muck et al., 2001). Initiation into drug and alcohol use is occurring early for many young people. Evidence from the 2003 Victorian Youth Alcohol and Drug Survey (Milne et al., 2007) reported that up to 90% of 14-year-olds had tried alcohol, 70% of established smokers had taken up the habit

prior to 18 years of age, and 21% of 14-17-year-olds had used cannabis in the 12 months prior to the survey. The more recent 2010 National Drug Strategy Household Survey reported that 21.2% of 15-19 year-olds had consumed alcohol on a weekly basis in the 12 months prior to the survey; eight per cent had smoked tobacco daily; and 23.8% had used cannabis at least once in their lifetime (Australian Institute of Health and Welfare, 2011).

Both cigarettes and marijuana have been identified as 'gateway' drugs, and early and/or polydrug use is a recognised risk for longer term harm (Loxley et al., 2004; McCambridge & Strang, 2003). In a longitudinal study of Swedish adolescents treated for substance misuse between 1968-1971 and 1980-1984, just one in five study participants in the older cohort had no adverse long-term effects, while more than 50% experienced two or more of the six adverse outcomes of physical illness, mental illness, substance misuse, poverty, criminality, or death. Outcomes differed by sex, with more women experiencing poverty and physical illness, and more men, criminality and continued substance misuse (Larm, Hodgins, Larsson, Samuelson, & Tengstrom, 2008).

Treatment experience, retention and outcomes

Research shows that retention of young people in treatment is influenced by a number of factors, including delays in waiting for services, low motivation, involuntary admission to treatment (via the juvenile justice system, for example), and family and geographic barriers (Colby et al., 2004). At-risk adolescents in particular are less likely to complete treatment (Faw, Hogue, & Liddle, 2005). Colby and colleagues note that retention during treatment may be assisted by strategies such as collaborative problem-solving; realistic expectations; understanding the relevance of the process; and enhancing motivation (Colby et al., 2004, p. 52).

There is very little research focused on how adolescents themselves experience treatment. In the United States, SAMHSA reports that very few adolescents who undergo treatment report positive outcomes (SAMHSA, 2006, cited in McWhirter, 2008, p. 173), and McWhirter identifies a number of weaknesses in current adolescent treatment programs:

... lack of a standardized treatment approach; lack of adequate empirical evidence of treatment efficacy; lack of programs designed specifically for adolescents; adolescent treatment in office or other settings not conducive to multimodal treatment; and minimal consideration for individual characteristics, such as readiness for treatment, gender, or ethnicity ... (McWhirter, 2008, p. 173).

More positively, adolescent views on what works in treatment are reported in the results of a qualitative study conducted in 2003 (Currie, 2003; Currie, Duroy, & Lewis, 2003). What was reported as most helpful by the young people is a "genuinely substantive and supportive [program] that tackled a real-world problem or need"; the provision of shelter and structure; concrete assistance, for example with family problems or with schooling, the offer of after-care, and "a general atmosphere of

attentive support". The element identified as most clearly helpful to many clients is the simple provision of respite from the environment from which they had come, although Currie notes that for many of the young people the time available to them in residential care is not long enough (Currie, 2003, p. 862). Least helpful were program features that were seen to be "confrontational, punitive, or demeaning", where punishment provoked anger and resistance or precipitated quitting the program (Currie, 2003, pp. 860-861).

Duration in treatment, together with readiness to change, are acknowledged as contributing to more positive outcomes from treatment, while the effects of comorbid conditions on receptivity to and/or the ability to participate in aspects of treatment can exercise a negative effect (Tammy Chung & Maisto, 2009). In findings from the Australian Treatment Outcome Study (ATOM), positive outcomes were associated with longer time in maintenance therapies and residential rehabilitation, while major depression was consistently associated with poorer outcomes (Teesson et al., 2008, p. 80). Key indicators of treatment experience and success include: client engagement; client satisfaction; progress during treatment, and change over time (see also Reisinger, Bush, Colom, Agar, & Battjes, 2003; Wilson et al., 2008, pp. 13-14). Given the heterogeneous nature of the adolescent substance misuse population, some research suggests that a harm minimisation approach, emphasising reduction rather than abstinence, could be a more useful measure of treatment success (Loxley et al., 2004).

Rates of relapse following treatment are reportedly higher for adolescents than for adults, and relapse happens more quickly (Currie, 2003; Wisdom & Gogel, 2010). Wisdom & Gogel (2010) suggest that this is partly because many adolescents enter treatment involuntarily (p. 817). Other studies point to such things as comorbidity (Grella & Stein, 2006), returning to the same environment on exit (Godley et al., 2006), and 'navigating' the system without really being engaged within it (Reisinger et al., 2003), as causes of relapse. In their recent study of the relationship between cigarette-smoking and 12-month alcohol and marijuana treatment outcomes, de Dios and colleagues (2009) also found that relapse was associated with persistent cigarette-smoking. Drawing upon data gathered from 1,779 adolescent participants in the Drug Abuse Treatment Outcomes Study for Adolescents (DATOS-A), they note that this belies the "widely held notion that smoking cessation may undermine substance abuse treatment", and go on to state that ceasing to smoke "may enhance substance abuse treatment outcomes as well as resolve the legal and health concerns associated with allowing youth to smoke cigarettes during treatment" (de Dios et al., 2009, p. 22). We note, however, that this conclusion infers causation, whereas smoking may instead be a marker of attitude or distress.

Butler and colleagues assert that outcome studies of adolescent residential programs suffer from a range of problems (2009, p. 75) including methodological variation, and systemic barriers such as staff time and resources and caseload size. As a result of these difficulties, those outcomes measured are most often demographic and 'natural' outcomes (p. 77). Bell (2007) argues that the design of most adolescent substance abuse research on service design and delivery has a

“focus on isolated variables and large datasets [that] may not help the service professional” (p. 107), and questions whether even greater investment in large quantitative studies will bring certainty. She suggests that outcome research needs instead to work qualitatively to help staff deal with the multi-dimensional, multi-layered, non-linear, variable and diverse nature of the service and the clients it serves.

Outcome measurement tools

There are numerous outcome measurement tools available for use in the measurement of a range of factors relevant to issues around substance misuse. In his non-exhaustive review, Deady (2009) organises 119 standardised screening, assessment and outcome tools into eight categories:

- global measures;
- general health and functioning measures;
- general mental health measures;
- specific mental health measures;
- positive mental health measures;
- general substance misuse measures;
- severity of substance misuse measures; and
- craving measures (p. 12).

While few of these measures are child or adolescent-specific, some have been adapted or used with varying success with these cohorts. However, many of the tools are time intensive, both in administration and scoring time, potentially limiting their use by busy practitioners, as well as being alienating for the young people.

For example, the Opiate Treatment Index (OTI), a structured interview measure, has been found to be effective for use with adolescent populations (Mills, Teesson, Darke, Ross, & Lynskey, 2004). It measures drug use, social functioning, criminality, HIV risk-taking behaviour, psychological adjustment, and health status. It has been found to have high test-retest reliability and internal consistency, as well as good convergent and cross-cultural validity. The OTI involves almost 100 questions across six domains, and an additional 28 questions in the General Health Questionnaire (GHQ), takes between 20-40 minutes to complete, and scoring requires the calculation of formulas (Darke, Ward, Hall, Heather, & Wodak, 1991).

Similarly, the teen version of the Addiction Severity Index (T-ASI), used to assess drug and alcohol dependence, encompasses adolescent-related issues not addressed in the ASI, and yields 70 ratings across seven domains (substance use, school status, employment status, peer/social and family relationships, and legal and psychiatric status). It “assesses *frequency* of use, without addressing *quantity* of use, a marked difference to other instruments” (Deady, 2009, p. 31). The T-ASI has been assessed as having good content/construct validity and test-retest reliability, and an inter-rater reliability of 90 per cent (Kaminer, Bukstein, & Tarter, 1991). Although four studies by Kaminer and colleagues have assessed it as being potentially useful as a measure of adolescent drug misuse (Kaminer, 2008; Kaminer, Blitz, Burleson,

Kadden, & Rounsaville, 1998; Kaminer et al., 1991; Kaminer, Wagner, Plummer, & Seifer, 1993), it consists of 154 items across seven sub-scales, taking between 20-45 minutes to administer, and a further 10-20 minutes to score.

The GAIN (Global Appraisal of Individual Needs) is a comprehensive biopsychosocial assessment tool that has been successfully used in populations with substance misuse issues, including adolescents. It is recommended as especially useful for adolescents in short-term residential and residential after-care programs for substance misuse (Allen & Wilson, 2003). Again, the full version consists of 1606 items; it includes 99 scales and sub-scales across eight dimensions of client background, substance use, physical and mental health, risk behaviours, environment, and legal and vocational information; training is required for its use; and it takes between one and two hours to complete (Deady, 2009; Dennis, Titus, White, Unsicker, & Hodgins, 2002).

There are a number of shorter instruments that have been validated and found to be useful in the assessment of attributes and outcomes for adolescents with substance misuse and associated issues. The Strengths & Difficulties Questionnaire (SDQ) has good test-retest reliability, concurrent validity and inter-rater reliability and has been used with adolescents with substance misuse issues (Deady, 2009, pp. 55-56). It assesses behaviours, emotions and relationships across five dimensions (hyperactivity, prosocial behaviour, peer relationships, emotional issues and conduct problems). It uses self-report, parent report and teacher report scales. Internal consistency has been assessed as strong, although the self-report scales have been found to have poorer internal consistency than the parent and teacher-rated scales (Goodman, 2001; Muris, Meesters, & van den Berg, 2003; Ronning, Handegaard, Sourander, & Morch, 2004). The SDQ consists of 25 items, and can be completed in 5-10 minutes. Deady notes that it "is easy to complete, user-friendly because of its positive attributes items, allows comparisons to be made between different populations and is sensitive to change" (Deady, 2009, p. 57).

The BTOM (Brief Treatment Outcome Measure) and the AATOM-C (Australian Alcohol Treatment Outcome Measure) assess treatment outcomes across domains of drug dependence, drug use, health, and social and psychological functioning. Both have been evaluated as valid and reliable instruments, having satisfactory or better internal reliability, inter-rater and test-retest reliability, and content and concurrent validity (Deady, 2009, p. 22; Simpson, Lawrinson, Copeland, & Gates, 2007). The AATOM has been found to have the ability to measure change over time (Simpson, Lawrinson, Copeland, & Gates, 2009). Both measures are "suitable for all clients who can understand spoken English" (Deady, 2009, p. 23); are brief and easy to administer, taking only 10-20 minutes to complete; and, are easily scored with no special training required.

The TOP (Treatment Outcome Profile) involves a short interview between client and key worker, is easy to administer, and measures 38 items across the four domains of substance use, health, crime, and social functioning. The TOP was designed for use with persons over 16 years and has been validated through a large (1000+) sample of

service users aged between 16-62, who were recruited from 63 public treatment organisations in England. Marsden and colleagues conclude that it is a “reliable and valid 20-item instrument for treatment outcomes monitoring” (John Marsden et al., 2008, p. 1450). However, it does not appear to have been validated for use with adolescents younger than 16 years of age.

The AUDIT (Alcohol Use Disorders Identification Test) is a widely used and well validated 10-item screening instrument measuring consumption, dependence, and related alcohol use problems. It has shown strong internal reliability, stable test-retest reliability, and high levels of predictive validity (Conigrave, Saunders, & Reznik, 1995; Daepfen, Yersin, Landry, Pecoud, & Decrey, 2000; Shields & Caruso, 2003). The AUDIT has been used with success in different populations and validated in a number of cultures (Deady, 2009), and has been shown to be a valid measure with adolescents (T. Chung et al., 2000). However, the 12 month time frame of some questions can limit its use as an outcome measure.

The Indigenous Risk Impact Screen (IRIS), consisting of two sections and screening for both drug and alcohol misuse and mental health problems, has been found in preliminary research to have good convergent validity, high internal consistency on both subscales (drug and alcohol and mental health), and good temporal stability. It comprises two sets of questions, with the first seven related to drug and alcohol risk and questions 8 through 13 related to mental health (Deady, 2009, p. 37). While the IRIS is a brief measure specifically developed for use with the Indigenous population, it does not yet appear to have been tested or adapted for use with clients under 18 years of age.

It should be noted that both the AUDIT and the IRIS are, by design, screening tools rather than specifically outcome measures.

The Stages of Recovery Instrument (STORI), developed by Andresen and colleagues (2006), aims to measure recovery from serious mental illness. Testing of the instrument is limited, and there is restricted data available on its use in different client groups or with adolescents with substance misuse issues (Weeks, Slade, & Hayward, 2010; Wolstencroft, Oades, Caputi, & Andresen, 2010). The STORI is a self-report measure consisting of 50 items in 10 groups of five subscales or stages. This stage concept used is similar to that identified in the research reported by Wilson, Saggars & Wildy (2008). The STORIs five stages are:

- moratorium - a time of withdrawal characterized by a profound sense of loss and hopelessness;
- awareness – realization that all is not lost, and that a fulfilling life is possible;
- preparation – taking stock of strengths and weaknesses regarding recovery, and starting to work on developing recovery skills;
- rebuilding – actively working towards a positive identity, setting meaningful goals and taking control of one’s life;

- growth - living a full and meaningful life, characterized by self-management of the illness, resilience and a positive sense of self (Andresen et al., 2006, pp. 3-4).

In pilot testing the instrument, statements within each stage were rated on a scale of 0-6 by clients, generating quantitative data, which was supplemented with qualitative data gathered via feedback forms and focus groups (Andresen et al., 2006, p. 9).

In common with the current research, the STORI aims to measure “constructs that are more meaningful to consumers than conventional outcome measures” (Deady, 2009, p. 114). While noting that some refinement is required in the discrimination between stages, Andresen and colleagues conclude that preliminary findings of internal consistency within the five stage subscales indicate that the STORI is “a measure of the consumer definition of recovery” (Andresen et al., 2006, p. 2).

Summary

The research literature demonstrates an ongoing need to determine the factors that need to be considered in establishing best treatment practice and ensuring more successful outcomes for these young people with substance misuse issues. While most studies continue to use a quantitative methodology, there has been a shift in recent years towards integrating into the research methodology those domains of particular relevance to adolescence as a distinct life stage. Similarly, although still lagging far behind in number to adult focused instruments, more adolescent-specific outcome measures are being developed. There is a recognition that both studies of treatment programs and the development of outcome measures will benefit from the inclusion of the voices of the young people themselves; however, qualitative studies and measures are still largely absent from the field.

Background to the research

The current ARC Linkage project builds upon a collaborative preliminary project undertaken in 2007-2008 (Wilson et al., 2008). This earlier study aimed to develop a qualitative composite profile of the progress of young people in treatment for alcohol and other drug (AOD) issues through a cross-sectional, qualitative study of treatment outcomes in two Mission Australia alcohol and other drug services for young people in Perth, Western Australia.

A participatory action research framework was used to enable the researchers and services staff to work collaboratively at all stages of the research process. Building on documentary material gathered from the services, participant observation, and interviews with young people, staff, and families, a framework was constructed, based on young people's own stories of their experiences and progress, and on the reports and descriptions of staff. The framework consisted of a continuum of five stages: stage one – removed from 'being normal'; stage two – resisting treatment; stage three – reflecting on the journey; stage four – returning to self; and stage five – 'being normal'.

Research aims

Having developed the framework in the preliminary research, the next step was to extend the research to the design of a qualitative instrument incorporating the 'voices' and insights of the young people around each of the framework's five stages, and to use responses to these narrative accounts to generate quantitative data. A successful ARC Linkage project grant application was prepared, with a multidisciplinary research team of social scientists, educators, psychologists, clinicians, addiction specialists, alcohol and other drug services staff, and government policy makers. The specific aims of the current research were to:

- establish the validity of a qualitative framework to assess the progress of young people in treatment;
- develop an assessment instrument based on the framework;
- determine the validity and reliability of the assessment instrument; and
- investigate the applicability of the framework and the instrument in a range of residential rehabilitation settings.

Methodology

Establishing validity

The face validity of the framework of five stages was established through focus groups conducted with staff and young people in three services: the Drug and Alcohol Youth Service (DAYS) in Perth, the Ted Noffs Foundation (TNF) at Randwick and Mission Australia's Triple Care Farm (TCF) at Robertson in New South Wales. The global stages, and the narratives associated with them, were further discussed and validated by service practitioners who attended a two-day workshop conducted by the research team and held in Sydney in September 2010.

Developing the instrument

An Instrument Development Group (IDG) was formed from within the larger research team to develop the assessment instrument. The first teleconference of the IDG took place in February 2010, with monthly teleconferences thereafter, supplemented by the team workshop held in Sydney in September 2010 and small group meetings held in Perth in the latter months of the year.

Development of the instrument involved an iterative process. Initially one of us (MW) wrote 'sets' of narratives reflecting each of the global stages of the framework around a particular experience, for example 'at the beach' or 'going shopping'. Members of the IDG then attempted to determine which 'stage' each of the five narratives depicted and, where there was crossover or confusion between the stages – for example, where a stage 2 (resisting treatment) narrative was identified by one or more members of the IDG as a stage 1 (removed from 'being normal') narrative - the narratives were discussed and refined. Once the IDG had settled on four 'sets' of narratives that each appeared to accurately reflect the five stages, these were tested across the larger team and at the workshop held with the service practitioners.

Table 1: Global stages

Global Stage One	Global Stage Two	Global Stage Three	Global Stage Four	Global Stage Five
<i>Shut down</i>	<i>Resisting</i>	<i>Awakening</i>	<i>Dreaming</i>	<i>Doing</i>
Removed from 'being normal'	Resisting boundaries	Reflecting on journey	Imagining a future	Being 'normal'
Unwell Lack of care for self Potentially explosive	Breaking rules	Head clearing Weight change Beginning to care for self	Eating healthily Getting fit More attention to self-presentation	Enjoying being well Forward-looking
Characterised by intentionally offensive language		Some offensive / bad language	A little bad language, primarily descriptive	Conversational / descriptive bad language

As well as consolidating the face validity of the framework of global stages, the focus of the workshop was directed towards establishing the key requirements of the instrument for mapping outcomes of treatment. We aimed to design an instrument that reflected and contextualised an integrated view of the complexity and 'messiness' of life across a number of domains, rather than fragmenting the life of the young person into isolated items that are then scored separately and given equal weight. The six outcome domains within each global stage that had been delineated in the original research were, by agreement, reduced to five. A separate domain of 'high risk behaviour' was deemed unnecessary, as it was considered that this type of behaviour will intersect at some point with each of the other five domains – social; emotional and psychological; physical; drug use, and developmental. 'Sets' of narratives around each of these five domains, incorporating the insights of workshop

participants on the aspects within each dimension, were then written collaboratively by five members of the team (MW, SS, HW, LR & JF).

Table 2: Aspects of the five dimensions

<i>Aspects of the Social dimension</i>	<i>Aspects of the Emotional and Psychological dimension</i>	<i>Aspects of the Physical dimension</i>	<i>Aspects of the Drug Use dimension</i>	<i>Aspects of the Developmental dimension</i>
family	self	nutrition	goals	responsibility
peers	mood	body	thoughts	independence
partner		sexual health	knowledge	
society				

The design of the instrument was finalised and a draft paper-based instrument called My Journey Map (MJM) and an e-version (eMJM) were produced and released to team members for testing and comment towards the end of 2010.

Trialling and training staff in administering the instrument

The draft MJM/eMJM was trialled among project research associates and with staff and young people at one residential centre in November 2010. The language and content of some narratives were further refined in response to feedback from the young people in these trial sessions. Training of staff from all participating centres in the administration of the final MJM/eMJM took place in Sydney and in Perth in late January 2011.

Data collection

It was envisaged that data collection from the MJM/eMJM would take place over an 11 month period to December 2011, with staff at all five centres collecting data on intake (T1) of all new clients to the services from 1 February 2011. Due to management changes at two of the centres early in the collection phase, one service was dropped from the study, and another had a significant break in data collection towards the middle of the year due to staff turnover. As a consequence, each phase of data collection was extended by two months. The first two phases of data collection were completed in February 2012. As the collection of data at T3 proved elusive, due to difficulties in locating and contacting the young people after they had left the service, this phase was further extended and completed at the end of June 2012.

Data collection on intake (T1) involved the client completing a self-assessment with the assistance of a staff member who had been trained in the administration of the eMJM/MJM. This staff member (S1) and one other staff member (S2) then independently assessed the client. It was recommended that assessments of clients in detoxification be delayed until their second week in the service to avoid possible complications created by physical symptoms. For those in residential rehabilitation,

it was recommended that the self-assessment and staff assessments be done as soon as possible, and not later than two weeks, after intake. The assessment process was expected to take no longer than 30 minutes. In practice, the process took anywhere between 20 to 45 minutes, depending upon the familiarity of the practitioner with the MJM, and the maturity of the young person.

The same processes were followed on exit from the service (T2), no matter when that exit took place. This meant that T2 data collection took place from as early as mid-February 2011 through to the end of February 2012, three months after the last T1 intake on 30 November. Wherever possible, data were also collected at three months' follow-up after exit from the centres (T3), with at least a self-assessment from the client at this time, and an assessment from the staff member conducting the follow-up if appropriate. This phase of data collection took place from May 2011 through to June 2012.

Results

Demographic data

Data were collected on 95 unique clients, of whom 70 (73.7%) were male and 25 (26.3%) female. Just under a quarter (23.1%) of the young people were Indigenous, and 14 (14.7%) were from a culturally and linguistically diverse background (CaLD). Four-fifths (80%) entered the service voluntarily, and for 80 of the young people (84.2%) it was their first time in that service.

At the time of entry to the service, the majority of the young people were unemployed (92.6%), and most had come from living with relatives or friends (70.5%). Almost half of the young people (49.5%) had completed Year 12.

The demographic characteristics of these young people are shown in Table 3:

Table 3: Demographic characteristics

Sex	Male	70
	Female	25
Ethnicity	Indigenous	22
	CaLD	14
	Other	59
Pathway	Voluntary	76
	Involuntary	19
First time in service	Yes	80
	No	15
Employment status*	Unemployed	88
	Full time	3
	Part time	2
	Casual	4
	Self employed	1
Last place of residence**	Relatives	56
	With friends	11
	Renting	4
	No fixed address	12
Education level***	Year 10	10
	Year 12	47
	TAFE	2
	University	13
	Other	23

* Changes in employment status were recorded over time for three clients with two improving their status and one becoming employed and then unemployed.

** Data not entered for 12 clients.

***Education status changed over time for eight clients who gained extra qualifications.

Overall a total of 380 assessments were filled out over all times and persons completing. The majority of these were completed at entry (275) and at exit from the service (84), with just 21 assessments completed post exit. The breakdown by time and person completing is shown in Table 4:

Table 4: Count of global stages completed by time and person

Time	Person Completing			Total
	P1	P2	P3	
T1	93	91	91	275
T2	26	32	26	84
T3	11	8	2	21
Total	130	131	119	380

Note: T1 = at entry; T2 = at exit; T3 = three months post-exit. P1 = client/student; P2 = staff member 1; P3 = staff member 2.

Data were available for the Global Stage for all of the above assessments. However, data was missing in the subscales for a total of 36 items over 24 assessments. As much of the analysis focused on totals and subscales, data for these 24 assessments were removed from the final data set, leaving 356 assessments:

Table 5: Count of questionnaires completed without missing data by time and person

Time	Person Completing			Total
	P1	P2	P3	
T1	83	89	89	261
T2	24	30	22	76
T3	9	8	2	19
Total	116	127	113	356

Clustering analysis, and attribute selection using machine learning, both indicated that client demographic characteristics were relatively insignificant overall.

Changes over time

At the key stage, both clients themselves and practitioners rated the majority of clients as improved or the same from T1 (start of treatment) to T2 (exit from the program).¹ Clinicians rated greater improvement over time than did clients, however this must be placed in context of clinicians in general starting from a lower key stage at T1.

¹ There is insufficient data at T3 to allow for meaningful analysis of change between T2-T3.

Table 6: Changes in overall sum of key stage scores T1 T2

Change	P1	P2	P3
Average	8.38	9.59	5.09
Improved	18	22	16
Worsened	3	6	5
No change	0	1	1
Improved Mean	10.44	13.68	10.75
Worsened Mean	-4.00	-3.83	-12.00
Count	21		22

Over the same time period, most clients also had improved scores on the five subscales:

Table 7: Changes in overall subscale scores T1 T2

Change	Social	Emotional	Physical	Substance Use	Development
P1					
Average	3.57	1.38	1.52	1.33	0.57
Improved	16	14	14	14	10
Worsened	3	0	6	5	5
No change	2	7	1	2	6
Count	21	21	21	21	21
P2					
Average	2.28	1.41	2.41	1.90	1.59
Improved	20	16	20	15	20
Worsened	7	5	6	4	4
No change	2	8	3	10	5
Count	29	29	29	29	29
P3					
Average	1.50	0.14	1.59	1.32	0.55
Improved	13	12	16	14	13
Worsened	7	8	4	6	6
No change	2	2	2	2	3
Count	22	22	22	22	22

Inter-rater reliability

At T1, the key stage ratings were significantly correlated amongst all raters. The correspondence between the two clinicians was highest.

Table 8: Spearman's Rho correlations and gammas for key stages between persons and Pearson correlations for sums of item scores between persons at T1

Measure	Key Stage						Sum of Item Scores					
	T1P1	T1P2	T1P1	T1P3	T1P2	T1P3	T1P1	T1P2	T1P1	T1P3	T1P2	T1P3
Corr	.472**		.294**		.511**		.506**		.473**		.771**	
N	89		89		89		78		78		85	
Gamma	.526**		.342**		.611**							

**p <.01

At T2, there was less data available and while the correspondence remained between client and clinicians, it was only significant for the two clinicians.

Table 9: Spearman's Rho correlations and gamma for key stages between persons and Pearson correlations for sums of item scores between persons at T2

Measure	Key Stage						Sum of Item Scores					
	T2P1	T2P2	T2P1	T2P3	T2P2	T2P3	T2P1	T2P2	T2P1	T2P3	T2P2	T2P3
Corr	.595**		.669**		.844**		.421*		.531*		.816**	
N	26		25		26		24		20		22	
Gamma	.758**		.881**		.978**							

*p <.05

**p <.01

Most subscales showed high and significant correlations. Again, the correspondence between the two clinicians was stronger. At T1:

Table 10: Pearson correlations between subscales by person at T1

Measure	Social	Emotional	Physical	Substance Use	Development
P1-P2					
Corr.	.593**	.383**	.460**	.257*	.101
N	78	78	78	78	78
P1-P3					
Corr.	.439**	.380**	.464**	.363**	.266*
N	78	78	78	78	78
P2-P3					
Corr.	.677**	.648**	.685**	.714**	.584**
N	85	85	85	85	85

*p <.05

**p <.01

At T2, only the physical subscale score was correlated strongly between the client and clinicians, with a correlation in the development subscale between P1 and P3. This is interesting as at T1 development was the weakest correlation, perhaps indicating that clients became better able to assess their development as they moved through the program. On the whole, it suggests that at T2 the clients and clinicians had different views about the current state of the client. The clinician ratings continued to be strongly related.

Table 11: Pearson correlations between subscales by person at T2

Measure	Social	Emotional	Physical	Substance Use	Development
P1-P2					
Corr.	.242	.162	.570**	.320	.377
N	24	24	24	24	24
P1-P3					
Corr.	.394	.208	.702**	.411	.521*
N	20	20	20	20	20
P2-P3					
Corr.	.720**	.627**	.800**	.792**	.781**
N	22	22	22	22	22

*p < .05

**p < .01

Internal consistency

Cronbach's alpha is a co-efficient measuring internal consistency. It is commonly used to estimate the reliability of psychometric tests. It is expressed as a figure between 0 and 1 and in general higher values are better, with studies describing acceptable values of alpha ranging from 0.70 to 0.95 (Tavakol & Dennick, 2011). Cronbach's alpha was calculated using all assessments (for all persons at all times). Cronbach's alpha was .926, indicating a high level of internal consistency.

The importance of each scale item to the overall assessment can be gauged by removing them individually to see what happens to the internal consistency. When this was calculated, alpha remained high when any single item was deleted, never falling below .919, and it never improved to above the initial value with the removal of an item, suggesting that no item was internally inconsistent (see Table 12). The 'Corrected item-total correlation' shows the relationship between each single item and the total of the items, and for each item this correlation was high (greater than .557 with a maximum of .728).

Table 12: Measure of internal consistency for removal of subscale items

	Scale mean if Item deleted	Scale variance if Item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's Alpha if Item deleted
Social_Family	41.44	112.421	.613	.407	.923
Social_Peers	41.22	109.599	.681	.518	.920
Social_Partner	41.47	111.850	.632	.443	.922
Social_Society	41.49	109.197	.693	.508	.920
Emotional_Self	41.30	109.072	.723	.549	.919
Emotional_Mood	41.32	111.639	.661	.479	.921
Physical_Nutrition	41.25	114.015	.573	.371	.924
Physical_Body	41.40	113.248	.557	.378	.924
Physical_Sex	41.56	113.909	.564	.371	.924
Substance_Goals	41.12	109.573	.728	.579	.919
Substance_Thoughts	41.28	108.762	.716	.590	.919
Substance_Knowledge	41.22	110.665	.719	.566	.919
Develop_Responsibility	41.15	108.850	.727	.579	.919
Develop_Independence	41.35	112.093	.655	.475	.921

Analysis

Aims

This research aimed to produce a qualitatively derived, psychometrically robust outcome measure of young people's progress in treatment. The outcome measure would be accessible to the alcohol and other drug workforce, and produce meaningful and useful outcome data. It was expected that the instrument would have potential to be used more widely than existing tools, and contribute to evidence-based residential treatment options for particular groups of young people in Australia.

The research took place over three years, and was conducted in four residential rehabilitation services for young people – three in New South Wales and one in Perth, Western Australia. Ninety-five young people took part in the study, exceeding the required minimum sample of 75 young people – 50 of whom were to be tracked as a longitudinal sample and 25 as a pseudo-longitudinal sample.

A final workshop attended by available research team members and associates was held in Adelaide on Tuesday, 11 December 2012. The aim of the workshop was to interrogate the qualitative and statistical results to:

- determine the validity and reliability of the assessment instrument;
- establish the outcomes from the project to determine the applicability of the framework and the instrument in a range of residential rehabilitation settings;
- assess how useful the MJM had proven to be; and
- discuss next steps.

Qualitative outcomes

Qualitatively, practitioners reported to the research team their views on the performance and usefulness of the MJM across a number of domains.

Relevance and usefulness

The overwhelming consensus from practitioners working with the MJM was that it was a relevant and useful tool for their work within the services. Practitioners commented that it:

- addressed key individual areas important to the holistic rehabilitation of young people and provided key insights across those areas ;
- was a useful tool in providing comparison between client and practitioner views of the young person's journey;
- that it provided opportunities to challenge clients who felt they were not making progress;
- that although some practitioners and clients found it challenging, young people easily related to the language and framework; and
- that it was engaging, and many of the young people found it to be fun, amusing, and 'unexpected' in its difference from other tools in use in the service.

The MJM was thought by one practitioner to be more useful with younger client groups.

Practicality

In general, the MJM was seen as an easy-to-use, practical tool. The narrative format was found to be helpful, the language demographically relevant, and illustrations in particular were highlighted as a positive and distinguishing feature of this assessment in comparison with others. One practitioner commented that the qualitative framework “seemed to be a breath of fresh air for many students, quite a lot of whom have an extensive history of involvement with mental health and AOD and are thus reluctant to answer ‘the same questions’ over and over again”.

The administration of the MJM was found by some practitioners and clients to be time-consuming. Estimates of time taken to complete the assessments ranged from 20-25 minutes with an experienced practitioner to 45 minutes with practitioners less familiar with the MJM. The process was further complicated with those clients who had difficulty thinking abstractly, requiring greater ‘prompting’ or interpretation from the practitioner to enable the young person to overcome features such as specifics of gender or events in various narratives. Having designated people in the service to administer the MJM to all young people had allowed for accretion of experience, provided continuity, and assisted in limiting these issues in two of the services involved in the research.

Distinctiveness

As distinct from other standard tools in use in the services, the MJM was seen as a “fun tool that young people actually enjoyed taking part in”. Practitioners reported that it takes a more holistic approach, and addresses issues important to young people – for example, the body, family, and peers – where other tools tend to focus on what is important to the practitioner, such as antisocial behaviours and trauma. Further, the use of narratives and illustrations were believed to be an advantage for use with this client group, as was the breakdown into aspects and dimensions. In contrast to other more age-generalised testing instruments, one practitioner commented that the MJM “speaks directly to [the young people] and in my opinion lets them know they are the focus”.

Client responses

Overall, it appears that the majority of the young people across all services responded very positively to the MJM, finding it interesting, ‘cool’, and enjoying working with narratives with which they could identify. However, one practitioner noted that it appeared to polarise opinion, with those young people who did not like it being often “quite verbal in their resistance”, while another commented that some clients had found it “a bit childish”.

Practical and ethical challenges of use

Some of the practical challenges involved in administering the MJM were generally relevant to all assessment protocols in use. These included the difficulties involved

when young people leave the service outside of the hours of work of staff who administer the tools; the unwillingness of clients leaving the service with a negative attitude to complete assessments; and issues around locating and contacting young people who had left the service for follow-up assessments.

The practical and ethical challenges that were noted as specific to the MJM included:

- the difficulty of keeping some young people focused for the length of time taken to complete it;
- finding time to administer the MJM, and fitting it in to other service priorities and activities;
- for the practitioner, getting “into the role” and being able to swear;
- for the young person, understanding the context-specific nature of offensive language used in the MJM, which is otherwise discouraged within the services;
- assisting the young people to move beyond concrete to abstract thought;
- avoiding clients drawing their own conclusions based on the stage they chose, or asking what their ‘score’ was;
- overcoming responses to particular terms used in the narratives that were personally distasteful; and
- dealing with responses from some young people who found some of the narratives hitting too close to home and therefore distressing.

In sum, the MJM has proved to be valid, reliable and consistent. Its narrative structure, reflecting the voices of their peers, can assist the young people in treatment to reflect on their own journeys across several dimensions of the personal and social aspects of life. Change is often complex and nonlinear; in mapping change over time, the MJM can also provide practitioners with periodic insight into key aspects of their clients’ lives which may not be otherwise readily ascertainable.

Quantitative outcomes

Establishing the psychometric properties of the instrument was projected to include four components:

- construct validity – to what extent do the items represent a coherent measure of a single variable;
- concurrent validity – how well do assessments made using the instrument fit with other assessments of progress;
- predictive validity – to determine the likelihood that client identified on exist as being at various stages such as ‘being normal’ present at that stage three months later; and
- reliability – inter-rater reliability (the extent of consistency between raters); internal consistency; and rest-retest reliability.

Quantitative analysis of the results from the MJM show the instrument was valid and internally consistent. Inter-rater reliability was significant between the two clinicians, and somewhat less so between client and clinician. At T1, there was also significant correlation across sub-scales. Assessments completed at T1 and T2 show change

over time for the majority of clients, as reported by clients and clinicians. Since practitioners did not report the use of any instruments with the participants who were involved in the research, that assessed the same variables, there were no available data with which to correlate the MJM data for concurrent validity. As shown in Table 12, however, internal consistency of items was significant. While our study plan originally provided support for follow-up of participants after treatment, funding was not sufficient to allow for this to take place, and so predictive validity of the MJM could not be determined due to the limited data set able to be collected at three months after treatment completion (T3).

Next steps

The team discussed the possibility of developing the current eMJM into an application that can be used securely on an iPad platform. The translation of the instrument from its current paper and survey formats over to an iPad platform will enable the team to address various issues raised by practitioners to ensure that it meets the needs of clinicians and clients. It will also allow for refinement of pathways within the instrument to take account of such things as gender difference and differing stages of cognitive development among the young people. It was also suggested that we develop a manual for interpretation of outcomes. The research team is currently investigating how these next steps might be accomplished.

Discussion and Conclusion

The health and social costs of young people's substance misuse are considerable – to themselves, their families, and the broader community. There is a pressing need to optimise treatment in adolescents with problematic substance use and to obtain successful outcomes among this population. Existing indicators of treatment experience and success include client engagement, client satisfaction, and change over time (see Reisinger et al., 2003; Wilson et al., 2008). There has been growing awareness in recent years of the need to integrate domains of particular relevance to adolescence into the research methodology. Similarly, more adolescent-specific outcome measures are currently being developed and some adult-focused measures have been adapted for the adolescent population (see Deady, 2009). There is also a recognition that both studies of treatment programs and the development of outcome measures will benefit from the inclusion of the voices of the young people themselves (Bell, 2007; Colby et al., 2004).

However, despite three decades of qualitative research in the AOD area, quantitative research rarely incorporates qualitative methods in data collection (Nitcher, Quintero, Nitcher, Mock, & Shakib, 2004). There are few qualitative tools to gauge treatment outcomes – despite some research which suggests that issues specifically related to client's experiences of treatment are not being captured by existing quantitative measures (J. Marsden, Stewart, Gossop, Rolfe, & Bacchus, 2000). Quantitative tools which measure retention, completion, and post-treatment abstinence risk overlooking the often recursive but nevertheless incremental gains made by young people within treatment which can lead to attitudinal change and harm reduction.

Qualitative work in the AOD area provides important insights into the perspectives of service providers, service consumers and drug users (Ford II et al., 2007; Healey et al., 2008). They have the potential to inform the construction of consumer friendly and locally relevant ways to measure outcomes in AOD services, so that modes of measurement “are sensitive to the key issues of concern for clients with drug and alcohol misuse problems” (J. Marsden et al., 2000, p. 457). In health research, it is increasingly accepted that consumers comprehend their situations in the context of their social life and life course. Methods that elicit these personal understandings can provide significant insights for use by service providers and in public health strategies.

As residential rehabilitation is significantly more expensive than other treatment options (Moore, Ritter, & Caulkins, 2007), we need to know more about its impact on clients, and on outcomes such as drug use, health and wellbeing, and social functioning. The qualitative developmentally-informed approach we have used in this project captured multiple perspectives across these dimensions, relying upon baseline self and staff assessments at entry to the service, contrasted with repeat assessments on exit from the service and, where possible, at three month follow up after exit. Data collected using the MJM approach has been shown to supplement quantitative data collected routinely by treatment services, to inform, illustrate,

confirm or even challenge the interpretation of those data. The MJM approach is not tied to retention in the service or to completion of the program, but instead captures change over time, no matter how short, and progress during treatment across each aspect of the five dimensions. The rich, short narrative accounts allow for individual differences and are accessible and meaningful for adolescents (see Colby et al., 2004), as well as providing a valuable source of information for staff to help them target specific treatment interventions, and to reflect on practice.

There were some limitations of the research. While every effort was made to capture T2 assessments as young people left the services, only a small sample was ultimately collected. We also note that it is likely that clinician rating correlations are higher than client-clinician ratings due to the fact that clinicians routinely discuss client progress. There is a need for well-funded longitudinal studies where these in-treatment measures are used to predict post-treatment success.

Implications for further research and practice include the possibility of a shift toward fully computer administered assessment. This would save time, and allow clients to respond without any influence (real or perceived) from the presence of the clinician administering the assessment instrument.

Drug and alcohol treatment services need to be able to demonstrate success in outcomes for the young people in their care. Given the transitioning and developmental nature of adolescence and the diverse and often complex issues with which many of these young people are struggling, such success is not necessarily obvious in absolute measures of retention or completion. Rather, for many of the young people in residential AOD rehabilitation, success can best be measured in the nuances of the developmental journey that they take through treatment. The MJM contributes to the ability of residential rehabilitation services for young people with problematic drug and alcohol issues to record and celebrate incremental change. This may not result in abstinence or treatment completion, but may nevertheless reflect success and provide young people with impetus for further positive change across various aspects of their lives.

Bibliography

- ABS. (2010). *Mental health of young people, 2007*. Canberra: Australian Bureau of Statistics (cat. no. 4840.0.55.001).
- Allen, John P., & Wilson, Veronica B. (Eds.). (2003). *Assessing alcohol problems: a guide for clinicians and researchers*. NIH publication no. 03-3745 (2nd ed.). Bethesda, MD: National Institutes of Health.
- American Association of Children's Residential Centers. (2009). Redefining residential: performance indicators and outcomes. *Residential Treatment for Children & Youth*, 26(4), 241-245.
- Andresen, Retta, Caputi, Peter, & Oades, Lindsay. (2006). The Stages of Recovery Instrument: development of a measure of recovery from serious mental illness. *Australian and New Zealand Journal of Psychiatry*, 40(11-12), 972-980.
- Australian Institute of Health and Welfare. (2005). National Comorbidity Initiative. A review of data collections relating to people with coexisting substance use and mental health disorders (AIHW cat. no. PHE 60). Canberra: Australian Institute of Health and Welfare.
- Australian Institute of Health and Welfare. (2011). 2010 National Drug Strategy Household Survey report (AIHW cat. no. PHE 145). Canberra: Australian Institute of Health and Welfare.
- Baker, A.J.L., & Purcell, J.F. (2005). New York State Residential Treatment Center admissions: differences in histories of maltreatment, behavioral problems, and mental health problems. *Residential Treatment for Children & Youth*, 22, 39-53.
- Bell, Erica. (2007). Time, space and body in adolescent residential services: re-imagining service research. *Addiction Research and Theory*, 15(1), 97-111.
- Brown, Sandra A. (2004). Measuring youth outcomes from alcohol and drug treatment. *Addiction*, 99(Suppl. 2), 38-46.
- Bukstein, O.G., Glancy, L.G., & Kaminer, Y. (1992). Patterns of affective comorbidity in a clinical population of dually diagnosed adolescent substance abusers. *Journal of the American Academy of Child and Adolescent Psychiatry*, 31, 1041-1045.
- Bukstein, O.G., & Winters, K. (2004). Salient variables for treatment research of adolescent alcohol and other substance use disorders. *Addictions*, 99(Suppl. 2), 23-37.
- Butler, Linda S., Little, Liza, & Grimard, Andre R. (2009). Research challenges: implementing standardized outcome measures in a decentralized, community-based residential treatment program. *Child & Youth Care Forum*, 38(2), 75-90.
- Chassin, Laurie, Knight, George, Vargas-Chanes, Delfino, Losoya, Sandra H., & Naranjo, Diana. (2009). Substance use treatment outcomes in a sample of male serious juvenile offenders. *Journal of Substance Abuse Treatment*, 36(2), 183-194.
- Chung, T., Colby, S.M., Barnett, N.P., Rohsenow, D.J., Spirito, A., & Monti, P.M. (2000). Screening adolescents for problem drinking: performance of brief screens against DSM-IV alcohol diagnoses. *Journal of Studies on Alcohol*, 61(4), 579-587.

- Chung, T., Martin, C.S., Grella, C.E., Winters, K., Abrantes, A.M., & Brown, S.A. (2003). Course of alcohol problems in treated adolescents. *Alcoholism: Clinical and Experimental Research*, 27, 253-261.
- Chung, Tammy, & Maisto, Stephen A. (2009). "What I got from treatment": predictors of treatment content received and association of treatment content with 6-month outcomes in adolescents. *Journal of Substance Abuse Treatment*, 37, 171-181.
- Colby, Suzanne M., Lee, Christina S., Lewis-Esquerre, Johanna, Esposito-Smythers, Christianne, & Monti, Peter M. (2004). Adolescent alcohol misuse: methodological issues for enhancing treatment research. *Addiction*, 99(Suppl. 2), 47-62.
- Cole, Michael, & Sacks, Tobie. (2008). When dual diagnosis means no diagnosis: co-occurring mental illness and problematic drug use in clients of alcohol and drug services in eastern metropolitan Melbourne. *Mental Health and Substance Use: dual diagnosis*, 1(1), 33-43.
- Collins, D.J., & Lapsley, H.M. (2002). *Counting the cost: estimates of the social costs of drug abuse in Australia 1998-9*. NDS Monograph Series, No. 49. Canberra: AGPS.
- Commentaries. (1999). Comments on Project MATCH: matching alcohol treatments to client heterogeneity. *Addiction*, 94(1), 31-69.
- Conigrave, K.M., Saunders, J.B., & Reznik, R.B. (1995). Predictive capacity of the AUDIT questionnaire for alcohol-related harm. *Addiction*, 90(11), 1479-1485.
- Connor, D.F., Doerfler, L.A., Toscano, P.F., Volungis, A.M., & Steingard, R.J. (2004). Characteristics of children and adolescents admitted to a residential treatment center. *Journal of Child and Family Studies*, 13, 497-510.
- Currie, Elliott. (2003). "It's our lives they're dealing with here": some adolescent views of residential treatment. *Journal of Drug Issues*, 33(4), 833-864.
- Currie, Elliott, Duroy, Tanya Hedges, & Lewis, Linda. (2003). Qualitative explorations of adolescents in treatment. *Journal of Drug Issues*, 33(4), 769-776.
- Daeppen, J.B., Yersin, B., Landry, U., Pecoud, A., & Decrey, H. (2000). Reliability and validity of the Alcohol Use Disorders Identification Test (AUDIT) imbedded with a general health risk screening questionnaire: results of a survey in 332 primary care patients. *Alcoholism: Clinical and Experimental Research*, 24(5), 659-665.
- Darke, S., Ward, J., Hall, W., Heather, N., & Wodak, A. (1991). The Opiate Treatment Index (OTI) Manual. Sydney, NSW: National Drug and Alcohol Research Centre, University of New South Wales, Technical Report No. 11.
- de Dios, Marcel A., Vaughan, Ellen L., Stanton, Cassandra A., & Niaura, Raymond. (2009). Adolescent tobacco use and substance abuse treatment outcomes. *Journal of Substance Abuse Treatment*, 37, 17-24.
- Deady, Mark. (2009). *A review of screening, assessment and outcome measures for drug and alcohol settings*. Sydney, NSW: NADA.
- Deas, D., Riggs, P., Langenbucher, J., Goldman, M., & Brown, S. (2000). Adolescents are not adults: developmental considerations in alcohol users. *Alcoholism: Clinical and Experimental Research*, 24(2), 232-237.
- Delaney, P.J., Broome, K.M., Flynn, P.M., & Fletcher, B.W. (2001). Treatment service patterns and organizational structures: an analysis of programs in DATOS-A. *Journal of Adolescent Research*, 16(6), 590-607.

- Dennis, M., Titus, J., White, M., Unsicker, J., & Hodgkins, D. (2002). (2002). Global Appraisal of Individual Needs (GAIN): Administration Guide for the GAIN and Related Measures. www.chestnut.org/li/gain/gadm1299.pdf
- Department of Health (UK). (2002). *Mental health policy implementation guide. Dual diagnosis good practice guide*. Retrieved from <http://www.doh.gov.uk/mentalhealth>
- Dodd, J., & Saggars, S. (2006). *The impact of drug and alcohol misuse on children and families*. Canberra: Australian Research Alliance for Children and Youth.
- Douglas, N., & Plugge, E. (2006). *A Health Needs Assessment for Young Women in Youth Offender Institutions*. London: YJB.
- Etheridge, Rose M., Smith, Jeff C., Rounds-Bryant, Jennifer L., & Hubbard, Robert L. (2001). Drug abuse treatment and comprehensive services for adolescents. *Journal of Adolescent Research, 16*(6), 563-589.
- Faw, Leyla, Hogue, Aaron, & Liddle, Howard A. (2005). Multidimensional implementation evaluation of a residential treatment program for adolescent substance abuse. *American Journal of Evaluation, 26*, 77-94.
- Flanzer, J. (2005). The status of health services research on adjudicated drug-abusing juveniles: selected questions and remaining questions. *Substance use & Misuse, 40*, 887-911.
- Fletcher, Adam, Calafat, Amador, Pirona, Alessandro, & Olszewski, Deborah. (2010). Young people, recreational drug use and harm reduction. In T. Rhodes & D. Hedrich (Eds.), *Harm reduction: evidence, impacts and challenges* (pp. 357-376). Luxembourg: Publications Office of the European Union.
- Ford II, James H., Green, Carla A., Hoffman, Kim A., Wisdom, Jennifer P., Riley, Katherine J., Bergmann, Luke, & Molfenter, Todd. (2007). Process improvement needs in substance abuse treatment: admissions walk-through results. *Journal of Substance Abuse Treatment, 33*, 379-389.
- Frankfort-Howard, R., & Romm, S. (2002). Outcomes of residential treatment of antisocial youth: development of or cessation from adult anti-social behavior. *Residential Treatment for Children & Youth, 19*, 53-70.
- George, T., & Krystal, J. (2000). Comorbidity of psychiatric and substance abuse disorders. *Current Opinion in Psychiatry, 13*(3), 327-331.
- Godley, Mark D., Godley, Susan H., Dennis, Michael L., Funk, Rodney R., & Passeti, Lora L. (2006). The effect of assertive continuing care on continuing care linkage, adherence and abstinence following residential treatment for adolescents with substance use disorders. *Addiction, 102*(1), 81-93.
- Goodman, R. (2001). Psychometric properties of the Strengths and Difficulties Questionnaire. *Journal of the Academy of Child and Adolescent Psychiatry, 40*(11), 1337-1345.
- Goren, N., & Mallick, J. (2007). Prevention and early intervention of coexisting mental health and substance use issues. Issues Paper No. 3.
- Gowing, L., Proudfoot, H., Henry-Edwards, S., & Teesson, M. (2001). *Evidence supporting treatment: the effectiveness of interventions for illicit drug use*. Canberra: Australian National Council on Drugs.
- Gray, D., & Saggars, S. (2005). Preventing harmful substance use among Indigenous people. In T. Stockwell & et al (Eds.), *Preventing harmful substance use: the evidence base for policy and practice* (pp. 383-393). Chichester: John Wiley & Sons Ltd.

- Grella, Christine E., & Stein, Judith A. (2006). Impact of program services on treatment outcomes of patients with comorbid mental and substance use disorders. *Psychiatric Services, 57*(7), 1007-1015.
- Grilo, C.M., Becker, D.F., Fehon, D.C., Walker, M.L., Edell, W.S., & McGlashan, T.H. . (1998). Psychiatric morbidity differences in male and female adolescent inpatients with alcohol use disorders. *Journal of Youth and Adolescence, 27*, 29-41.
- Hall, W., Lynskey, M., & Teesson, M. (2001). What is comorbidity and why does it matter? In M. Teesson & L. Burns (Eds.), *National comorbidity project. National drug strategy and national mental health strategy (Vol. 31-32)*. Canberra: Commonwealth Department of Health and Aged Care.
- Handwerk, Michael L., Clopton, Kerri, Huefner, Jonathan C., Hoff, Kathy E., & Lucas, Christopher P. (2006). Gender differences in adolescents in residential treatment. *American Journal of Orthopsychiatry, 76*(3), 312-324.
- Healey, Christine, Peters, Sarah, Kinderman, Peter, McCracken, Cherie, & Morriss, Richard. (2008). Reasons for substance use in dual diagnosis bipolar disorder and substance use disorders: a qualitative study. *Journal of Affective Disorders. doi:10.1016/j.jad.2008.05.010*
- Hegarty, Michelle. (2004). Mind the gap. The National Illicit Drug Strategy (NIDS) Project to improve support for children from families where there are mental illness and substance abuse (MISA) issues. NSW: The Mental Health Coordinating Council (NSW) & Department of Community Services (NSW).
- Henderson, S., Holland, J., McGrellis, S., Sharpe, S., & Thompson, R. (2007). *Inventing adulthoods: a biographical approach to youth transitions*. London: Sage.
- Hser, Y., Grella, C.E., Hubbard, R.L., Hsieh, S.C., Fletcher, B.W., Brown, B.S., & Anglin, M.D. (2001). An evaluation of drug treatments for adolescents in four U.S. cities. *Archives of General Psychiatry, 58*(7), 689-695.
- Intergovernmental Committee on Drugs National Drug Strategy Development Working Group. (2009). *Australia's national drug strategy: beyond 2009. Consultation paper*. Canberra: Ministerial Council on Drug Strategy.
- Jane-Llopis, E., & Matytsina, I. (2006). Mental health and alcohol, drugs and tobacco: a review of the comorbidity between mental disorders and the use of alcohol, tobacco and illicit drugs. *Drug and Alcohol Review, 25*(6), 515-536.
- Joshi, V., Grella, C.E., & Hser, Y.I. (2001). Drug use and treatment initiation patterns: differences by birth cohorts. *Journal of Drug Issues, 31*(4), 1039-1062.
- Kaminer, Y. (2008). The Teen Addiction Severity Index around the globe: the tower of Babel revisited. *Substance Abuse, 29*(3), 89-94.
- Kaminer, Y., Blitz, C., Burlison, J.A., Kadden, R.M., & Rounsaville, B.J. (1998). Measuring treatment process in cognitive-behavioral and interactional group therapies for adolescent substance abusers. *Journal of Nervous and Mental Disease, 186*, 407-413.
- Kaminer, Y., Bukstein, O.G., & Tarter, R.E. (1991). The Teen-Addiction Severity Index: rationale and reliability. *International Journal on Addictions, 26*(2), 219-226.
- Kaminer, Y., Wagner, E., Plummer, B., & Seifer, R. (1993). Validation of the Teen Addiction Severity Index (T-ASI). Preliminary findings. *American Journal on Addictions, 2*(3), 250-254.

- Knudsen, Hannah K. (2009). Adolescent-only substance abuse treatment: availability and adoption of components of quality. *Journal of Substance Abuse Treatment, 36*(2), 195-204.
- Larm, Peter, Hodgins, Sheilagh, Larsson, Agne, Samuelson, Yasmina Molero, & Tengstrom, Anders. (2008). Long-term outcomes of adolescents treated for substance misuse. *Drug and Alcohol Dependence, 96*, 79-89.
- Latimer, W.W., Stone, A.L., Voight, A., Winters, K.C., & August, G.J. (2002). Gender differences in psychiatric comorbidity among adolescents with substance use disorders. *Experimental and Clinical Psychopharmacology, 10*, 310-315.
- Liddle, Howard A. (2004). Family-based therapies for adolescent alcohol and drug use: research contributions and future research needs. *Addiction, 99*(Suppl. 2), 76-92.
- Loxley, W., Toumbourou, J., & Stockwell, T. (2004). *The prevention of substance use, risk and harm in Australia: a review of the evidence*. Canberra: Department of Health and Ageing.
- Marsden, J., Stewart, D., Gossop, M., Rolfe, A., & Bacchus, L. (2000). Assessing client satisfaction with treatment for substance use problems and the development of the Treatment Perceptions Questionnaire (TPQ). *Addiction Research, 8*(5), 455-470.
- Marsden, John, Farrell, M., Bradbury, C., Dale-Perera, A., Eastwood, B., Roxburgh, M., & Taylor, S. (2008). Development of the Treatment Outcomes Profile. *Addiction, 103*(9), 1450-1460.
- Marsden, John, Gossop, Michael, Stewart, Duncan, Best, David, Farrell, Michael, & Strang, John. (1998). The Maudsley Addiction Profile. A brief instrument for treatment outcome research. Development and user manual. London: National Addiction Centre/Institute of Psychiatry.
- McCambridge, Jim, & Strang, John. (2003). Development of a structured generic drug intervention model for public health purposes: a brief application of motivational interviewing with young people. *Drug and Alcohol Review, 22*, 391-399.
- McWhirter, Paula T. (2008). Enhancing adolescent substance abuse treatment engagement. *Journal of Psychoactive Drugs, 40*(2), 173-182.
- Mills, K.L., Teesson, M., Darke, S., Ross, J., & Lynskey, M. (2004). Young people with heroin dependence: findings from the Australian Treatment Outcome Study (ATOS). *Journal of Substance Abuse Treatment, 27*(1), 67-73.
- Milne, Bronwyn, Bell, James, Lampropoulos, Basiliki, & Towns, Susan. (2007). Alcohol, drugs and Australian young people. *International Journal of Adolescent Medicine and Health, 19*(3), 245-253.
- Ministerial Council on Drug Strategy. (2004). *The national drug strategy: Australia's integrated framework 2004-2009*. Canberra, ACT: Commonwealth of Australia.
- Ministerial Council on Drug Strategy. (2011). *National Drug Strategy 2010-2015. A framework for action on alcohol, tobacco and other drugs*. Canberra: Commonwealth of Australia.
- Moore, T.J., Ritter, A., & Caulkins, J.P. (2007). The costs and consequences of three policy options for reducing heroin dependency. *Drug and Alcohol Review, 26*, 369-378.
- Muck, Randolph, Zempolich, Kristin A., Titus, Janet C., Fishman, Marc, Godley, Mark D., & Schwebel, Robert. (2001). An overview of the effectiveness of

- adolescent substance abuse treatment models. *Youth & Society*, 33(2), 143-168.
- Muris, P., Meesters, C., & van den Berg, F. (2003). The Strengths and Difficulties Questionnaire (SDQ): further evidence for its reliability and validity in a community sample of Dutch children and adolescents. *European Child and Adolescent Psychiatry*, 12(1), 1-8.
- National Treatment Agency for Substance Misuse. (2009). Getting to grips with substance misuse among young people. The data for 2007/08. London: National Treatment Agency for Substance Misuse.
- Nitcher, M., Quintero, G., Nitcher, M., Mock, J., & Shakib, S. (2004). Qualitative research: contributions to the study of drug use, drug abuse, and drug use(r)-related interventions. *Substance Use & Misuse*, 39(10-12), 1907-1969.
- Prior, M., Sanson, A., Smart, D., & Oberklaid, F. (2000). Research Report No. 4. *Pathways from infancy to adolescence: Australian Temperament Project 1983-2000*. Canberra: Australian Institute of Family Studies.
- Project MATCH Research Group. (1997a). Matching alcoholism treatments to client heterogeneity: Project MATCH posttreatment drinking outcomes. *Journal of Studies on Alcohol*, 58, 7-29.
- Project MATCH Research Group. (1997b). Project MATCH secondary a priori hypothesis. *Addiction*, 92, 1671-1698.
- Project MATCH Research Group. (1998). Matching alcoholism treatments to client heterogeneity: Project MATCH three-year drinking outcomes. *Alcoholism: Clinical and Experimental Research*, 22, 1300-1311.
- Pumariega, Andres J. (2007). Residential treatment for children and youth: time for reconsideration and reform. *American Journal of Orthopsychiatry*, 77(3), 343-345.
- Reihman, K.S., Bluthenthal, R., Juvonen, J., & Morral, A. (2003). Adolescent social relationships and the treatment process: findings from quantitative and qualitative analyses. *Journal of Drug Issues*, 33(4), 865-895.
- Reisinger, Heather Schacht, Bush, Trevor, Colom, M. Alejandra, Agar, Michael, & Battjes, Robert. (2003). Navigation and engagement: how does one measure success? *Journal of Drug Issues*, 33(4), 777-800.
- Ronning, J.A., Handegaard, B.H., Sourander, A., & Mørch, W.T. (2004). The Strengths and Difficulties self-report Questionnaire as a screening instrument in Norwegian community samples. *European Child and Adolescent Psychiatry*, 13(2), 73-82.
- Rounds-Bryant, J.L., Kristiansen, P.L., Fairbank, J.A., & Hubbard, R.L. (1998). Substance use, mental disorders, abuse, and crime: gender comparisons among a national sample of adolescent drug treatment clients. *Journal of Child & Adolescent Substance Use*, 7(4), 19-34.
- Rowe, C.L., Liddle, H.A., Greenbaum, P.E., & Henderson, C.E. (2004). Impact of psychiatric comorbidity on treatment of adolescent drug users. *Journal of Substance Abuse Treatment*, 26(2), 129-140.
- Ruiz, B.S., Stevens, S.J., McKnight, K., Godley, S.H., & Shane, P. (2005). Treatment issues and outcomes for juvenile-justice-involved youth from rural and non-rural areas. *Prison Journal*, 85(1), 97-121.
- SAMHSA. (2004). *Results from the 2004 National Survey on Drug Use and Health: national findings*. US: Substance Abuse and Mental Health Services Administration.

- SAMHSA. (2006). Advisory of findings from the 2005 National Survey on Drug Use and Health. http://www.samhsa.gov/news/newsreleases/060907_nsduh.aspx on 06/02/2013.
- Satre, Derk D., Mertens, Jennifer R., Arean, Patricia A., & Weisner, Constance. (2004). Five-year alcohol and drug treatment outcomes of older adults versus middle-aged and younger adults in a managed care program. *Addiction, 99*, 1286-1297.
- Shane, Patricia A., Jasiukaitis, Paul, & Green, Rex S. (2003). Treatment outcomes among adolescents with substance abuse problems: the relationship between comorbidities and post-treatment substance involvement. *Evaluation and Program Planning, 26*, 393-402.
- Shields, A.L., & Caruso, J.C. (2003). Reliability generalization of the Alcohol Use Disorders Identification Test. *Educational and Psychological Measurement, 63*(3), 404-413.
- Simpson, M., Lawrinson, P., Copeland, J., & Gates, P. (2007). The Australian Alcohol Treatment Outcome Measure (AATOM-C): psychometric properties. Sydney: National Drug and Alcohol Research Centre, Technical Report No. 288.
- Simpson, M., Lawrinson, P., Copeland, J., & Gates, P. (2009). The Alcohol Treatment Outcome Measure (ATOM): a new clinical tool for standardising outcome measurement for alcohol treatment. *Addictive Behaviors, 34*(1), 121-124.
- Spooner, Catherine. (1999). Causes and correlates of adolescent drug abuse and implications for treatment. *Drug and Alcohol Review, 18*, 453-475.
- Staiger, Petra K., Melville, Fritha, Hides, Leanne, Kambouropoulos, Nicolas, & Lubman, Dan I. (2009). Can emotion-focused coping help explain the link between posttraumatic stress disorder severity and triggers for substance use in young adults? *Journal of Substance Abuse Treatment, 36*(2), 220-226.
- Stockwell, T.R., Gruenewald, P., Toumbourou, J., & Loxley, W. (Eds.). (2005). *Preventing harmful substance use: the evidence base for policy and practice*. Chichester: Wiley & Sons.
- Stockwell, Tim, Toumbourou, John W., Letcher, Primrose, Smart, Diana, Sanson, Ann, & Bond, Lyndal. (2004). Risk and protection factors for different intensities of adolescent substance use: when does the prevention paradox apply? *Drug and Alcohol Review, 23*, 67-77.
- Strada, M.J., Donohue, B., & Lefforge, N.L. (2006). Examination of ethnicity in controlled treatment outcome studies involving adolescent substance abusers: a comprehensive review. *Psychology of Addictive Behaviors, 20*(1), 11-27.
- Szirom, Tricia, King, Debbie, & Desmond, Kathy. (2004). Barriers to service provision for young people with presenting substance misuse and mental health problems. Canberra: Australian Government Department of Family and Community Services on behalf of NYARS.
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education, 2*, 53-55.
- Teesson, M., Mills, K.L., Ross, J., Darke, S., Williamson, A., & Havard, A. (2008). The impact of treatment on 3 years' outcome for heroin dependence: findings from the Australian Treatment Outcome Study (ATOS). *Addiction, 103*(1), 80-88.
- Tomlinson, K.L., Brown, S.A., & Abrantes, A.M. (2004). Psychiatric comorbidity and substance use treatment outcomes of adolescents. *Psychology of Addictive Behaviors, 18*(2), 160-169.

- Toumbourou, John W., Hamilton, M., & Fallon, B. (1998). Treatment level progress and time spent in treatment in the prediction of outcomes following drug-free therapeutic community treatment. *Addiction*, *93*(7), 1051-1064.
- Wagner, E.F. (2008). Developmentally informed research on the effectiveness of clinical trials: a primer for assessing how developmental issues may influence treatment responses among adolescents with alcohol use problems. *Pediatrics*, *121*(Suppl 4), S337-S347.
- Wagner, E.F. (2009). Improving treatment through research: directing attention to the role of development in adolescent treatment success. *Alcohol Research & Health*, *32*(1), 67-75.
- Waldron, Holly Barrett, & Kaminer, Yifrah. (2004). On the learning curve: the emerging evidence supporting cognitive-behavioral therapies for adolescent substance abuse. *Addiction*, *99*(Suppl. 2), 93-105.
- Weeks, Gavin, Slade, Mike, & Hayward, Mark. (2010). A UK validation of the Stages of Recovery Instrument. *International Journal of Social Psychiatry*, 1-14. doi:10.1177/0020764010365414
- Weis, R., Whitmarsh, S.M., & Wilson, N.L. (2005). Military-style residential treatment for disruptive adolescents: effective for some girls, all girls, when, and why? *Psychological Services*, *2*, 105-122.
- Williams, R.J., & Chang, S.Y. (2000). A comprehensive and comparative review of adolescent substance abuse treatment outcome. *Clinical Psychology: Science and Practice*, *7*(2), 138-166.
- Wilson, Mandy, Sagers, Sherry, & Wildy, Helen. (2008). Outcome measures for young people attending substance misuse services for detoxification and residential rehabilitation in Perth, Western Australia. Perth: Centre for Social Research, Edith Cowan University.
- Winters, K., Stinchfield, R., Latimer, W., & Lee, S. (2007). Long-term outcome of substance-dependent youth following 12-step treatment. *Journal of Substance Abuse Treatment*, *33*, 61-69.
- Winters, Ken C. (1992). Development of an adolescent alcohol and other drug abuse screening scale: personal experience screening questionnaire. *Addictive Behaviors*, *17*, 479-490.
- Wisdom, J.P., & Gogel, L.P. (2010). Perspectives on adolescent residential substance abuse treatment: when are adolescents done? *Psychiatric Services*, *61*(8), 817-821.
- Wolstencroft, Keren, Oades, Lindsay, Caputi, Peter, & Andresen, Retta. (2010). Development of a structured interview schedule to assess stage of psychological recovery from enduring mental illness. *International Journal of Psychiatry in Clinical Practice*, 1-8. doi:10.3109/13651501003668552



NDRI

ndri.curtin.edu.au

national drug research institute



Curtin University