The nature and treatment of adolescent substance abuse

Catherine Spooner, Richard Mattick and John Howard
With foreword by Wesley Noffs

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The nature and treatment of adolescent substance abuse

Final report of the adolescent treatment research project

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Foreword

In 1990 I joined the work of The Ted Noffs Foundation, then the Wayside Foundation. My experience at Life Education, where I had spent the previous four years, convinced me that appropriate scientific research should assess the needs of the program, be integral in the development of its structure and deliver and evaluate its effectiveness and efficiency in both the short and long term.

The program that was running, when we started at the Foundation, reflected the 12-step philosophy. It was exclusively residential. However, as I was to discover, there were very few residential programs available in Australia for the target group, (adolescents 14 to 18 years).

The questions which I wanted to ask were:

a) how many people actually needed this kind of program
b) how many programs of this kind were there in New South Wales
c) was there a better way of supporting this group and
d) was there any need for such a service at all.

To resolve the issue about the need and appropriateness of the program coupled with a desire to give the best possible service to people who came to us for help; and to be known to have the best possible service.

At the first Window of Opportunity Conference in Adelaide in November 1991 I talked with Professor Ian Webster about the development of a best practice model for an adolescent drug and alcohol program. Many people I spoke to were surprised to find that I was committed to shutting the residential service down if our needs assessment and our eventual study were to show that there was a better option; I had and still have an absolute commitment to the findings and to acting in accordance with the findings. Professor Webster thought the idea had merit and advised me to meet with Dr Richard Mattick of the National Drug and Alcohol Research Centre. That first discussion with Richard Mattick was the beginning of a partnership which changed the way the Ted Noffs Foundation delivers its services and has been the example to other non-government services.

In 1994, some two years and three months after our initial discussions, the project was funded and we were able to start interviewing for the position of Research Officer.

I cannot deny the emotional attachment to this project. Richard Mattick and Mandy Noffs were convinced of its importance for those two years and never waned in their conviction that this project was relevant.

I am truly grateful for the advice and support that was given to us by Des Semple, Peter Homel, Bruce Flaherty, Jan Copeland, Kevin Hedge, Alex Wodak, and John Howard. These people were positive about the concept and provided the strength to continue before we had received funding. Research has been under-valued by politicians and only now is becoming important to non-government clinical services in drug and alcohol. My message is that it is worth fighting for, worth waiting for, it is accountable and it is our duty to those who come to us in need, to give our best, that research can provide.

Wesley Noffs
Executive Manager
Ted Noffs Foundation

Executive summary

The Ted Noffs Foundation (TNF) previously ran a drug-treatment program for adolescents, based upon the 12-step model. This program was seen to need to change to keep up with current knowledge of best practice. Funding was obtained from the New South Wales Drug and Alcohol Directorate for a review of best practice in treatment for adolescent substance abusers, the design of a new drug-treatment program based upon that review, and the design of an evaluation plan for the new program. Information sources used for the review included the research literature, clinical opinion and youth consultations. The target group for this project was youths aged 11 to 18, with a maladaptive pattern of substance use that meets the criterion of dependence or abuse as defined by the Diagnostic and Statistical Manual of Mental Disorders. The project report documents the review of best practice and outlines the program plan and evaluation plan designed on the basis of that review. Below is a summary of the main conclusions of that report, rather than a comprehensive summary of all that was written.

1) Extent of substance use

A general contextual picture of adolescents with substance-use problems is that a) these are a minority of the youth population, in fact, they are even a minority of the population of young illicit substance users: most young people who try substances do not develop significant problems as a result of their substance use and b) these adolescents are polysubstance users, with alcohol or opioids, then cannabis and amphetamines the main substances of choice. The preference for opioids is not seen among the broader population of young illicit substance users; the extent of preference for stimulants and cannabis is not seen in adult clients.

2) Causes of substance abuse

Antecedents of maladaptive substance use

Substance use is determined by numerous, inter-related individual, family, social, environmental and other risk factors, as well as protective factors. Substance abuse is often part of a problem behaviour syndrome which includes delinquency, substance abuse, adolescent pregnancy, school failure and dropping out. Consequently, interventions that try to deal with single-risk factors or risk behaviours are highly unlikely to be effective. Risk factors for substance abuse identified by the literature review included: genetic vulnerability, being male, lack of social bonding, poor quality family relationships and parental skills, childhood physical and sexual assault, low socio-economic status, macro-environmental factors, knowledge, high stress and lack of coping/support mechanisms, associating with substance-abusing peers, poor school performance, antisocial behaviour, early age of first use, adolescence, and being labelled as a substance abuser. Factors that have not been found to be associated with substance abuse, or for which the evidence is inconsistent, include family structure, locus of control, mental health and self-esteem.

Self-reported reasons for use

The reasons for use vary among individuals and across time within individuals. For example, substance use could begin as a result of curiosity or peer pressure, then continue for social/recreational purposes. For some, use might then continue or increase when it is used to help cope with life or specific problems. Most young people report that they use substances because using substances is fun. However, as samples contain higher percentages of problematic substance users, the reasons for use tend to shift away from 'fun', towards 'to forget'. The reasons for substance use are an important factor for service provision. Some substance use might be functional and not problematic. However, where substance use is interfering with adolescents dealing with their problems or their lives in general, teaching life skills and providing support to deal with those problems can be a useful and effective intervention.

3 Consequences of substance misuse

The adverse consequences of substance misuse are multifarious and affect numerous domains of adolescents' lives, including their own health and welfare, as well as affecting the lives of their families, and on the community. Treatment programs need to be planned with consideration for what damage has already been done by the clients' substance use and to have staff trained to be able to deal with the various problems that are likely to arise. The need to deal with the various problems resulting from substance use is required not just for humanitarian reasons, but to assist client outcomes. Substance use should not be seen as the central issue and targeting this alone while ignoring issues, such as homelessness, unemployment, and alienation from the family and society, is ineffective and inappropriate.

Specific consequences discussed in the report are substance-related mortality, substance-related morbidity (general overview), suicide, HIV, and other blood-borne viral infections, injuries, reactions to street chemistry, mental health, maturational lag, crime, and the effects on the family, education, and vocation. The youth perception of substance-related 'problems' is also reviewed, and it is noted that their perception of a problem is not necessarily the same as the perception of workers in the field, or in other professionals.

4 The client group: adolescent substance abusers

Characteristics of adolescents

When dealing with adolescents with maladaptive patterns of substance use, it is sometimes difficult to distinguish between dysfunctional behaviour that requires intervention and normal adolescent behaviour. Furthermore, those responsible for assessing and working with adolescents need to understand the capacities and normal tendencies of adolescents to ensure that their service is developmentally appropriate and that the expectations of the service are appropriate to their clients' developmental stages.

Adolescents in treatment: do they differ to adults in treatment?

Adolescents in drug-treatment programs are not just younger versions of adults in drug-treatment programs. Their issues and needs differ qualitatively and quantitatively and youth-specific services are best able to meet those needs.

Diverse clients: diverse issues and needs

Adolescent substance abusers are a heterogeneous group with various problems, issues, and needs. The particular issues that are pertinent with the following subgroups of adolescent substance abusers are discussed: females and males, younger adolescents, adolescents from a non-English speaking background, lesbian and gay adolescents, indigenous Australian adolescents, adolescents with a dual diagnosis, survivors of trauma, referrals from the Juvenile Justice system, homeless adolescents, and adolescents from rural areas.

It is impossible and inappropriate to have specific services for each specific group. Service providers need to adopt a dual strategy of a) using what we already know about subgroup issues, to be proactive in ensuring their service is accessible, appropriate and effective for all adolescents and b) talking to clients: asking them about their individual needs and involving them in service planning, implementation and evaluation. Liaison with professionals and/or community members with knowledge of particular subgroups can also assist in ensuring that an organisation is equipped to deal with a subgroup and, if necessary, assist with individual clients.

5 Screening and assessment

Definition

McLellan and Dembo's definition was used:

> Assessment is a broad term including a range of evaluation procedures and techniques designed to measure key areas of adolescent functioning as well as the adolescent's environment. The term conveys the idea that assessment procedures are not single events, but instead involve the integration of client and treatment measurement techniques of different types, at different times, and for different purposes during the course of various interventions designed to have an impact on adolescents' AOD (alcohol and other drug) problems. [1] (p. 4)

The screening and assessment process
The process of screening and assessment begins with an identification of the need to screen and then includes screening, assessment, case-management, and evaluation.

Issues in screening and assessment
Issues discussed include the need for ethical standards (for example, the need for informed consent), the need for screening and assessments of high psychometric standards, the need for establishing a respectful and trusting relationship within the assessment process and the need to restrict data collection to what is necessary.

Screening
The purpose of screening is to identify the potential presence of a particular problem, to indicate whether or not there is a need for a more comprehensive assessment. Screening instruments should contain language appropriate for the adolescents' age, culture and so on; give the 'big picture'; and be easy for a broad range of professionals to administer.

Assessment
The main purposes of assessment are: a) to accurately identify whether or not an adolescent needs treatment; b) to identify other support people who can be involved in the assessment and treatment, c) to inform a treatment plan; and d) to provide baseline information for monitoring progress. Assessment needs to incorporate a comprehensive review of a variety of areas in the youth's life via multiple methods including interviews, observation, and the use of external sources of information. Various criteria for assessment instruments are presented, including: the usefulnes of the information it provides for treatment planning and evaluation, ease of administration, reliability and validity, appropriateness and acceptability of the language to the target population and the cost of materials. In some cases, there could be a need for more in-depth and definitive diagnostic assessment of one or more particular area.

Validity of self-report
Screening and assessment procedures that use self-report data need to consider the willingness and ability of the client to give accurate information; to ensure that those factors known to affect the accuracy of self-report are managed and that scales to detect response bias or inaccuracy are built into assessment instruments.

The assessor
Assessment of each client should be coordinated by a single, appropriately trained person; spreading responsibility for assessment can lead to unnecessary duplication or issues being missed.

The family
It is recommended that the family be assessed at the time of assessing the youth or immediately afterwards. Assessment officers, therefore, need to be trained and skilled to assess families.

Coordination
Ideally, there should be coordination of screening and assessment across geographic areas.

6 Treatment-outcome research: a review

Treatment interventions

Adolescent treatment-outcome literature: The results of single-group studies of treatment outcome for adolescents with substance problems are largely inconclusive in determining effectiveness of interventions.

The controlled treatment-outcome research on interventions for substance-use problems in adolescents is limited to a small number of unreplicated studies. The results generally indicate that the effects of intervention against no-treatment or wait-list control interventions is positive. No single approach is clearly superior to any other, based on available evidence. However, behavioural methods and family therapy have some evidence of efficacy from randomised treatment-outcome studies. Given the lack of literature on these promising interventions with adolescents, the adult literature on cognitive-behavioural interventions and family therapy has been reviewed.

Social skills and cognitive restructuring: There is consistent and impressive evidence that the addition of social skills-training and cognitive-restructuring techniques (particularly in combination) to an alcohol-treatment program, helps to reduce alcohol consumption in the short term and the long term. It is not imperative that clients demonstrate social skills deficits to benefit from this treatment. However, clients should be assessed for cognitive deficits as these could interfere with effective learning of the skills.

Family therapy: Family therapy might be an effective intervention with selected clients in substance-dependence treatment programs when delivered by adequately trained therapists. There is no evidence that family therapy is effective with opioid users under other conditions.

Implementation variables related to cost and/or effectiveness

Treatment setting and duration: Based on the results of a number of well-conducted, controlled clinical trials it has been concluded that there is no evidence that treatment delivered on a residential basis is superior to intervention delivered on a sessional or non-residential basis for people dependent substances, overall. Nor is there any evidence to support the view that residential treatment is superior to day-patient intervention. However, it could prove that residential care is suitable for specific sub-populations of substance-dependent individuals, such as those requiring supervised detoxification, respite care, or who (because of the extreme severity of substance-use problems) require an intense form of supervised intervention.

Group versus individual format: Most psychological interventions that can be conducted on an individual basis can also be conducted on a group basis.

Characteristics of effective therapists: It is recommended that therapists be trained in skills that enable them to: show empathy; develop a warm and supportive relationship with the client; have an organised approach to each case; anticipate client difficulties; plan for, and assist, the client in practising strategies to deal with potentially difficult situations; and make appropriate referrals.

Treatment fidelity: It is recommended that well-developed and articulated treatment manuals and protocols be used in the treatment of substance-use problems. There should be full specification of all of the treatment procedures advocated, and there should be complete instructions about how the interventions are to be implemented. This structured approach should be supported with appropriate training and supervision to agency staff.

Follow-up: With alcohol problems, there should be some continued assistance (that is, 'after-care') available at the end of intervening with clients, to extend the intervention. This assistance should be structured and scheduled. The client should return for follow-up appointments whatever their drinking status.

Clinical opinion

There is a large opinion-based literature on treatment methods for adolescents with substance-related problems. While not conclusive, some of this literature was presented in the report, for example:

- substance-resistance skills-training and life-skills training can be useful
- intervention plans need to address educational needs as it could be necessary to make up for lost time
- parents might need to learn effective and appropriate parenting skills and more realistic expectations of their children; they might also need treatment for their own substance-use problem
- helping adolescents develop satisfying and attainable substance-free activities can be useful.

7 Retention in treatment

Increasing retention in treatment is important because it has generally been associated with improved treatment outcome. Client variables that have been associated with retention in treatment include: age (being older), education, type of psychopathology, involvement of family and/or friends and lack of active coping skills. Client variables that have been found to be unrelated or inconsistently related to retention include legal pressure and severity of psychopathology. Program variables that could be important to retention include the program environment and the treatment staff. Implications for service delivery are discussed in Chapter Six.

8 Survey of services and service providers

A small survey of a representative range of youth services or youth service providers was conducted to obtain a) descriptive information about the range of services currently available to the target group, including specific adolescent drug-treatment services and other related services; and b) key informant information about service provision to the target group.

The information from service providers shows that there seems to have been a few main messages:

- when planning and implementing an adolescent service, the adolescent's perspective needs to be considered, that is, adolescent tendencies, developmental stages, issues and needs, and cultural background;
- though difficult, balancing consistency and flexibility is necessary;
- services need to be holistic and better coordinated with each other; and
- services need to be close to the youth's home, or at least link in with other services that are close to the youth's home, so that continuous support can be provided.

That is, services need to have a client-focus, address all the clients' needs and do so in a user-friendly manner. No single service delivery method (residential, non-residential or outreach; substance-specific or non-substance-specific) is seen as superior. Rather, a range of service delivery methods, as well as a range of service components, are seen as necessary for the various youths who make up the target group. Whether all such services can be delivered by one organisation is doubtful. Rather, the service system must be better coordinated so that client-treatment matching, case management and system planning can be facilitated.

9 Youth consultations

Youth consultations were conducted to collect information on the target group's a) experience of substance treatment (what they did, and did not, like, what worked, what did not) and b) ideas on what they would, and would not, like in a new service.

All of the issues raised by the youths had also been raised by service providers. However, the young people consulted were particularly concerned about having a say in their treatment, having some autonomy, and being understood and respected. These are rights that

adults expect and take for granted but that do not seem to be granted, to young people in treatment, at least not to the degree that young people would like.

10 Synthesis: implications for service planning and delivery

Program delivery model
No single service delivery model has been shown to be superior in adolescent substance treatment. Rather, it could be pertinent to focus on treatment matching. Unfortunately, however, treatment matching is hampered by a) a lack of information based upon controlled studies on treatment matching and b) a lack of assessment procedures and service options: adolescents tend to go to services that happen to be close or that happen to have a space, rather than the service that would best suit their situation.

Program philosophy
Two principles were repeatedly and emphatically promoted throughout the course of this study: holistic treatment and harm-reduction.

Program issues
A number of issues that apply to all youth services were raised by the information sources of this study:

- adolescents are not adults
- treatment is a process, not an event
- substance use serves a function for young people
- rules and boundaries were among the most important components of a program for client outcome, even though the clients complained about them
- it is important to not label adolescents who use substances in a maladaptive manner
- networking and collaboration among services is essential for youth services.

Program objectives
Abstinence is no longer the only treatment goal. Treatment objectives now need to be more holistic and based upon thorough assessment, knowledge of what is valuable for adolescent drug treatment, consideration for what is achievable, particularly in light of the client's readiness to change, and the informed opinion and wishes of the client.

Program content
It is unlikely that any program can include all of the components that are necessary to deal with all of the problems facing young people with substance-related problems. Components include:

- family and peer programs
- physical and other recreational activities
- services for dealing with the range of issues that accompany substance misuse, whether they be causal, consequential or correlational (for example, child sexual abuse, psychological problems, medical problems)
- practical assistance (for example, organise or provide accommodation)
- mechanisms/strategies for behaviour modification (for example, a reward or levels system) might be necessary
- skills-development programs (for example, social skills, communication skills, living skills) and cognitive restructuring
- educational and vocational programs
- counselling
- outreach for attracting adolescents into a program before they are coerced to do so
- graduated withdrawal and structured, scheduled after-care
- monitoring and evaluation.

Most interventions can be implemented in a group context with greater cost-effectiveness

Program duration
Adolescents with substance-use problems need continuous assistance, not just a discrete program.

Program documentation
Documented policies and procedures are crucial to the delivery of a quality service.

Youth participation
Youths want and need to participate in their treatment program, rather than being just told what to do. Their involvement in setting rules, program development, their own treatment plan, and so on, ensures they have a commitment to the program and assists the program to meet their needs.

Accessibility
Preference has been expressed for a lot of small services, geographically dispersed so that a) youths can be close to community and family supports and b) services do not have the atmosphere of a large institution.

Appropriateness for all
There seems to be little support for a principle of specific programs for specific groups, particularly as there are so many overlapping subgroups of adolescents that such a principle would be impractical. Furthermore, 'special' programs for 'special' people can be counter to the notions of treating people as individuals and of mainstream society accepting and understanding the diverse range of people who make up society. Staff training and program policies need to ensure that programs can be attractive and appropriate to all youths with substance-use problems. Occasionally, there might be some basis for a small number of specialised programs.

Attractiveness
Services tend to be unattractive to youths: youths are fearful of most services, the staff and what they will do to them. This acts as a barrier to seeking treatment and, once in, youths do not want to stay in services that they do not like or do not feel comfortable in. Services need to be perceived as attractive, relevant, credible, and confidential to attract and retain clients.

Staff
Staff teams need a variety of backgrounds as there are a variety of needs that no single person would be likely to meet. Whatever the background, they need to be trained, psychologically mature, stable, and supervised by a coordinator. Furthermore, young people are particularly concerned that the staff cares about them: a supportive staff team is seen as crucial to their progress.

Study limitations
Most data upon which this report's synthesis of knowledge of best practice has been based was clinical opinion. The dearth of randomised controlled trials means that we plan on the basis of (at best) educated guesses, not upon proven facts.

11 Proposal for a new program for adolescent substance abusers

On the basis of the information collected for this study, the Ted Noffs Foundation's program for adolescents with substance-use problems has been redesigned as follows:

Goal To increase the ability of clients* to manage their lives effectively.

Objectives:
1. To decrease harmful substance use by clients
2. To decrease problem behaviours by clients
3. To improve intrapersonal and interpersonal functioning by clients.

Rationale: A holistic perspective is necessary to facilitate sustainable, positive change in the clients' substance use.

Content: The program includes: case management, education and training, a family program, support and counselling, drug-free activities, incentives for behaviour modification, and aftercare. Participation can be residential or non-residential.

Evaluation Three studies are planned to evaluate the program. Firstly, a process evaluation using action research methods will be conducted to monitor program implementation and effect; results at this stage will be used to fine-tune the program. Second, a randomised controlled trial is to be used to test the effectiveness of the program relative to assessment and referral. Finally, an economic evaluation of the program is to be conducted to determine the cost-effectiveness of the program.

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1 Introduction

1.1 Background to this project

In 1979, the Wayside Foundation (renamed the Ted Noffs Foundation in 1992) took over the management of the Errol Flynn Children's Refuge in Kings Cross, Sydney. This refuge was initially established for 'teenage runaways', as they were called in the 1970's. Over time, the refuge developed into a drug-treatment program for adolescents, based upon the 12-step model. By the early 1990's, this program was seen to need to change to keep up with current knowledge of best practice as documented by the Quality Assurance Project. [2, 3] Funding was obtained from the New South Wales Drug and Alcohol Directorate for a review of best practice in treatment for adolescent substance abusers, the design of a new drug-treatment program for adolescents, based upon that review, and the design of an evaluation plan for the new program. Information sources used for the review included the research literature, clinical opinion, and consultations with youth. This report documents the review of best practice and outlines the program plan and evaluation plan designed on the basis of that review.

This review does not encompass business management or quality assurance issues. Principles of best practice in these areas that are as applicable to youth treatment services as they are to other services are documented elsewhere. [4]

While all three authors contributed to the whole report, primary responsibility for certain chapters was delegated to different authors. Chapter 5 was written by Richard Mattick, Chapter 4 was primarily written by John Howard and the rest of the report was written by Catherine Spooner. There is some overlap in Chapters 1 to 8, as the same issues are reviewed and/or discussed from the different perspectives of each chapter. The issues are brought together in Chapter 9, that is then used to inform the program plan in Chapter 10.

1.2 Definition of the target group

The target group for this project has been:

- young people aged 11 to 18
- with a maladaptive pattern of substance use that meets the criterion of dependence or abuse as defined by the *Diagnostic and Statistical Manual of Mental Disorders* (see this chapter, Tables 1.1 and 1.2) [5] (DSM-IV)
- requiring assistance because of the maladaptive pattern of substance use
- living in New South Wales.

It is anticipated that the findings of this project can be generalised to other such youth in Australia and in other similar cultures such as in the USA, the UK, and Canada.

The appropriateness of using the DSM-IV criteria for diagnosing substance abuse by youth has been questioned, particularly in relation to problematic alcohol use. [6, 7] Bukstein and Kaminer discussed differences between adolescent substance use and adult substance use that suggest that an adolescent-specific diagnostic system is required. [8] These include differences in the stability of abuse, patterns and consequences of use and the social, peer, and developmental contexts of use. Furthermore, many of the symptoms of substance abuse could actually be symptoms of a other or co-existing problems to which adolescents are particularly prone, such as a co-existing psychiatric disorder, family problems, or a problem behaviour syndrome, as described by Jessor and others. [9, 10] However, a careful analysis of the appropriateness of the criteria for adolescents by Kaminer supports the use of DSM-IV criteria for adolescents, at least until well-validated and widely accepted adolescent-specific diagnostic criteria are established. [11]

Table 1.1 Criteria for Substance Abuse from the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)

A.	A maladaptive pattern of substance use leading to clinically significant impairment or distress, as manifested by one (or more) of the following, occurring within a 12-month period:	
	(1)	recurrent substance use resulting in a failure to fulfil major role obligations at work, school, or home (e.g., repeated absences or poor work performance related to substance use, substance-related absences, suspensions, or expulsions from school; neglect of children or household)
	(2)	recurrent substance use in situations in which it is physically hazardous (e.g., driving an automobile or operating a machine when impaired by substance use)
	(3)	recurrent substance-related legal problems (e.g., arrests for substance-related disorderly conduct)
	(4)	continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance (e.g., arguments with spouse about consequences of intoxication, physical fights)
B.	The symptoms have never met the criteria for Substance Dependence for this class of substance.	

Table 1.2 Criteria for Substance Dependence from the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)

A maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by three (or more) of the following, occurring at any time in the same 12-month period:		
(1)	tolerance, as defined by either of the following:	
	(a)	a need for markedly increased amounts of the substance to achieve intoxication or desired effect
	(b)	markedly diminished effect with continued use of the same amount of the substance
(2)	withdrawal, as manifested by either of the following:	
	(a)	the characteristic withdrawal syndrome for the substance (refer to Criteria A and B of the criteria sets for Withdrawal from the specific substances)
	(b)	the same (or closely related) substance is taken to relieve or avoid withdrawal symptoms
(3)	the substance is often taken in larger amounts or over a longer period than was intended	
(4)	there is a persistent desire or unsuccessful efforts to cut down or control substance use	
(5)	a great deal of time is spent in activities necessary to obtain the substance (e.g., visiting multiple doctors or driving long distances), use of the substance (e.g., chain-smoking), or recover from its effects	
(6)	important social, occupational, or recreational activities are given up or reduced because of substance use	
(7)	the substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance (e.g., current cocaine use despite recognition of cocaine-induced depression, or continued drinking despite recognition that an ulcer was made worse by alcohol consumption)	

1.3 Terminology

Labels, such as 'drug addict', have been used in the past in a manner that has been derogatory

towards people who use substances and people who have problems that are related to or exacerbated by substance use. As much as possible, this report uses terminology which is commonly used and accepted in academic publications. We would like to emphasise that the use of terms such as 'substance abuser' neither denotes blame nor suggests moral condemnation of the substance user. Such terms are used in a very specific sense, as defined below.

The term 'substance abuse' is used in this report to denote substance use that is consistent with a diagnosis of substance abuse, as defined in the DSM-IV (see above). The term 'substance abuser' is used to denote people whose behaviour is consistent with the diagnosis of substance-abuse disorder.

Terms such as 'substance misuse' and 'problematic substance use' are used to refer to substance use that is risky or harmful to the well being of the user or others, but might or might not be sufficient for diagnosis as substance abuse or substance dependence under the DSM-IV.

Where the term 'substance use' is used, the use may be anything from experimental use to dependent use, as defined by the World Health Organisation [12]:

- 'experimental use' that might or might not continue
- 'functional use' that serves some purpose, such as for recreation, but does not cause problems for the user
- 'dysfunctional use' that leads to impaired psychological or social functioning
- 'harmful use' that is causing damage to the user's physical or mental health and
- 'dependent use' that could involve tolerance, withdrawal if use is ceased and continued use despite severe consequences.

The World Health Organisation's categories of dysfunctional use and harmful use would probably fall under the category of substance abuse in the DSM-IV criteria.

'Substance dependence' is rarely specifically mentioned in this report, mainly because a) the majority of youth who are seen by treatment agencies tend to have problems about substance abuse rather than substance dependence and b) the expression 'substance abuse and/or dependence' is clumsy. However, most of the time, where 'substance abuse' is mentioned, 'abuse and/or dependence' would be applicable.

The term 'substance' is used to denote any substance that is used for its psychoactive effects. Substances include alcohol, cannabis, amphetamines, hallucinogens, tranquillisers, inhalants, and opioids.

The term 'drug-treatment program' is used to refer to any intervention or set of interventions designed to enable clients to manage their substance use. This term is not an ideal one, in the sense that it denotes a medical cure. However, it is a commonly accepted term for the notion just described.

Tobacco use, while a significant public health problem, is not addressed in this study. The main reason for not including tobacco use is that it tends not to be associated with the social dysfunction that is associated with the misuse of other substances.

1.4 Nature and extent of substance use

To facilitate an understanding of the nature and extent of substance use by adolescents, the following statistics are presented:a) population statistics on substance use and b) statistics on substance use from surveys of substance users. Details of the studies discussed below are presented in Appendix I.

At the time of writing (1996), statistics on the number of adolescent substance abusers and the demand for specific services were not available. A review of the problems of making such estimates has been reviewed elsewhere. [13]

1.4.1 Population statistics

As part of the National Drug Strategy (NDS)[5], the Commonwealth Government has commissioned a series of national household surveys of substance use in 1985, 1988, 1991, and 1993. [14] The 1991 survey included an additional sample of 367 respondents, aged 14 to 19 years, so data from that survey are discussed below. [15]

Alcohol

Alcohol is the most widely used substance in Australian society: in 1991, 94% of all respondents had tried it and 53% of respondents reported that they drank alcohol once a week or more. Although adolescents (17%) were less likely than adults (40%) to drink alcohol two or more times a week, when they did drink they reported higher levels of consumption. To the question: On a day when you drink alcohol, how many do you usually have?
36% of adolescents compared to 15% of adults reported that they usually consumed five or more drinks. This level of drinking has been defined as 'excessive' by the National Health and Medical Research Council. [16]

Tobacco

Data from the Australian Bureau of Statistics indicates that smoking has declined by a quarter since the late 1970s. This change has mainly been the result of people giving up smoking rather than a reduction in the uptake of smoking. [17] In 1991 25% of males and 21% of females reported that they were regular smokers. Among the young people age 14 to 19, 14% of males and 22% of females were regular smokers. This was the only age group in which more females than males smoked. Increased uptake of smoking by young females has been of concern in Australia in the 1990's. [17]

Pharmaceutical products

There is widespread concern about the health, social and economic costs associated with the inappropriate use of prescribed and over-the-counter medication in Australia. [17] Nearly one-third (32%) of the national sample had tried tranquillisers. Adolescents were less likely than adults to have ever tried tranquillisers, 12% of female adolescents and 7% of male adolescents versus 32% of adults overall.

Cannabis

Cannabis remains the most commonly used illicit substance. About one-third (30%) of respondents reported that they had ever tried cannabis, 22% had used it in the past year, 13% had used it in the last week. Overall, the prevalence of having ever used cannabis by adolescents was similar to that for adults. In 1991, adolescent males (39%) were more likely to have ever used cannabis than adolescent females (27%). Among those who had ever used cannabis, adolescents were more likely than adults to have used within the last year (72% versus 35%). These statistics suggest that cannabis is primarily used during adolescence, and that use tends to cease in adulthood.

Other illicit substances

About 95% of respondents had never tried either opioids or cocaine. Of those who had tried one of these substances, three-quarters had not used it in the previous twelve months, suggesting that frequent or regular users represented no more than about 1% of the population.

The prevalence of inhalant, hallucinogen, and amphetamine use, within the general community was also very low. Of those who had ever tried one of these substances, more than two-thirds had not used them in the previous twelve months, suggesting that most use has been

[5]The NDS was previously known as the National Campaign Against Drug Abuse (NCADA).

experimental or short-lived.

Comparative data between adolescents and adults on the use of other illicit substances are not provided by this report, presumably because of the small number of illicit substance users surveyed.

Studies of general youth populations, such as school student surveys [18] and household surveys of teenagers, [19-21] have reported similar patterns of adolescent substance use to the NDS survey, although the exact prevalence rates vary with different sampling methods and differently worded questions. For example, among adolescents from these other surveys, 58% to 90% described themselves as current drinkers, 11% to 22% indicated that they drank heavily when they did drink, 20% to 26% of the samples were current smokers, 10% to 25% of the samples smoked cannabis and less than 5% of the samples used other illicit substances.

Summary

In summary, it appears that the most commonly used substance in the general community is alcohol, the most commonly used illicit substance is cannabis, and that other illicit substances are rarely used. Adolescents appear more likely to drink excessively when they do drink and to be current users of cannabis than adults.

General population surveys are valuable in that they give a general picture of substance use in the community. However, as stated by the authors of the NDS survey report, such data are of limited value for describing harmful substance use:

> National household surveys of the sample size used here cannot produce enough respondents who engage in marginal or deviant activities. As a result, the conclusions that can be drawn from the data are limited in terms of understanding who used these drugs and why they use them. [15] (p.48)

Studies of young substance users have been necessary to learn more about their patterns of substance use. Such studies are described below.

1.4.2 Surveys of substance users

Numerous Australian studies of substance users have been conducted to get a more detailed picture of patterns of use than can be obtained from general population surveys. The sampling methods, data collection strategies and research questions of each of these studies vary. The implications of such variations have been discussed elsewhere. [22, 23] The intention here is to use these Australian studies of substance users to describe the illicit substance use patterns of young people in treatment, relative to illicit substance users not in treatment.

1.4.2.1 Studies of young illicit substance users

From Australian studies of young illicit substance users[6], [24-26], it appears that those who use illicit substances tend to:

- be polysubstance users, that is, use more than one type of substance
- use alcohol frequently and drink amounts of alcohol that are risky or harmful to health when they do drink, relative to the recommendations for safe drinking of the National Health and Medical Research Council (NHMRC) [16]
- use cannabis and amphetamines
- not use opioids.

However, there are currently some indications of an increase in the use of opioids among young people.[7] Specific indicators have come from:

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[6]Entry criteria for each study varied slightly - see Appendix I.

[7]Professor Wayne Hall, Director, National Drug and Alcohol Research Centre, Sydney. Personal communication, August, 1995.

- ethnographic research with adolescent heroin users in Cabramatta [27]
- Dr Shane Darke, National Drug and Alcohol Research Centre, recruited opioid injectors in the standard manner for a survey and found that the average age of users was in the mid-twenties, rather than the usual mid-thirties. Furthermore, Darke's research has suggested that those who inject amphetamines have been quickly crossing over to injecting opioids
- some treatment agencies have been reporting an increasing number of young opioid users.

A minority of young illicit substance users expressed concern about their substance use and few had undergone treatment for their substance-use problems. Most perceived that their use was recreational and in control. This perception was supported by the finding that most young illicit substance users were not using illicit substances on a daily basis, although alcohol was high relative to NHMRC recommendations. [16]

1.4.2.2 Studies of users of specific illicit substances

Among opioid users who were older than 18 years: [28]

- use of alcohol, tobacco, and prescription substances was high
- injecting was the norm
- sharing of injecting equipment was common among those not in treatment.

Among cocaine users aged 14 to 35 [29], the use of all other illicit substances was more common than among non-cocaine users.

Among amphetamine users, aged 15 to 49 years [30]:

- the use of cannabis and alcohol was high
- most did not use regularly or frequently
- about half usually injected amphetamines
- about one-third were classified as dependent
- two-thirds had never had treatment
- amphetamines and cannabis were the two most preferred substances.

Among adult recreational cocaine users [31], 31% had ever injected cocaine, 16% did so on a regular basis, and it was asserted that most (if not all of this sample) appeared to be in control of their use.

Among mostly adult users of ecstasy[8] [32, 33]:

- most used cannabis and about half used amphetamines
- opioid use was uncommon
- misuse (for example, daily use) of ecstasy was rare.

Comparisons among studies of users of specific substances are difficult not only because of the different research methods employed for each study, but also because of the different research agendas behind each study. Furthermore, the validity of simplistic comparisons between, for example, amphetamine users and opioid users, is problematic because most substance users, particularly younger substance users, tend to be polysubstance users. [34] These studies are, however, useful for gaining some insights into the use of specific substances, particularly when use of those substances is sufficiently rare that other studies yield little specific information.

[8] Ecstasy is the street name for the substance 3,4-methylenedioxymethamphetamine or MDMA

1.4.2.3 Studies of injecting substance users

Studies of injecting drug users (IDUs) have included younger respondents, but most respondents have been in their twenties and thirties. [35, 36] One study that investigated differences between older (23 years or older) and younger (less than 23 years) IDUs was conducted in Perth. [37] It was found that, relative to older IDUs, younger IDUs:

- used more stimulants and LSD
- used fewer opioids and benzodiazepines
- were more likely to inject all or most of their substances.

1.4.2.4 Studies of young people with a high likelihood of illicit or problem substance use

Studies of young people who use inner-city health and welfare agencies [38], homeless youth [39], street-kids [40] and young offenders in Juvenile Justice facilities [41] have found that these groups tend to be characterised by:

- polysubstance use
- heavy use of alcohol
- use of illicit substances, particularly cannabis, amphetamines, and prescribed psychoactive drugs.
- opioid use and injecting drug use as a minority activity:
  - recent opioid use ranged from 9% to about half of the samples
  - injecting drug use, ranging from 18% to about half of the samples
  - a significant minority of injectors (25% to 38%) reported that they shared injecting equipment.

1.4.2.5 Studies of clients of drug services

The majority of adult clients of drug-treatment programs tended to have used and to have had primary problems with opioids. [28, 30, 42, 43] Use and/or problems with alcohol and prescribed psychoactive substances were also reported by a significant minority. Reported problems with cannabis use were rare.

Among clients of Dunsmore House, a community-based, residential, drug-treatment program for adolescents, the main substances of abuse for males were cannabis (31%) or alcohol (28%); for females the main substances of abuse were opioids (31%). [44] Between 1989 and 1995, there was a steady decrease in alcohol as the main substance of abuse (37% to 16%) and an increase in cannabis as the main substance of abuse (12% to 32%). There was a sharp increase in heroin as the main substance of abuse from 12% in 1992-3 to 29% in 1994-5. Miller also noted that the substance of abuse is not necessarily the substance of choice. The substances of first or second choice for clients of Dunsmore tended to be alcohol (45%), heroin (33%) cannabis (32%), or amphetamines (21%). [45] (See Appendix I)

1.4.3 Summary

Comparisons between adults and adolescents, substance users and substance misusers are difficult when studies use different sampling methods, data collection methods, and questionnaire items. However, a general contextual picture of adolescents with substance-use problems emerges. Firstly, they are a minority of the adolescent population, in fact, they are even a minority of the population of young illicit substance users: most young people who try substances do not develop significant problems as a result of their substance use. [46] Second, they are polysubstance users, with the main substances of abuse varying between males (cannabis and alcohol) and females (opioids). The extent of opioid use is not seen among the broader population of young illicit substance users; the extent of preference for stimulants and cannabis differs to preferences of adult clients.

How does this pattern compare with the pattern of adolescent substance use overseas? There is no shortage of information on substance-use patterns in Western countries. For example, in the USA, surveys have been conducted with homeless youth [47], '"street"

adolescents' [48], juvenile detainees [49], school students [50, 51], adolescent clients of drug-treatment programs [52, 53], the general population [54] and minority groups [55, 56] to name a few. It is beyond this report to review the patterns of substance use for each country and such reviews exist elsewhere. [57, 58] Suffice to say that, although there are international differences, we have more in common with each other than in conflict - particularly the tendency for polysubstance abuse (rather than single-substance abuse) among adolescent substance abusers. Consequently, research from other Western countries, such as the USA and Britain, is generally relevant to the Australian context, and vice versa.

1.5 Cost of treatment

Estimating the economic costs of substance abuse and dependence is difficult and complex, but a recent exploration in Australia by Collins and Lapsley estimated that at least $18,845 million was incurred in 1992 by the Australian community as a result of all past and present substance abuse. [59] This figure represented a 26% increase on the estimate for 1988. Tangible costs, such as health care services and benefits, loss of production, law enforcement and welfare accounted for about 60% of this amount, with the remaining 40% made up by intangibles, such as pain and suffering, and consumption forgone by the deceased.

One tangible cost is the provision of treatment services. Ali, Miller and Cormack provided estimates for 1988 of $581 million for alcohol, $609.6 million for tobacco and $29.9 million for 'illicit substances' being the cost of health care. [60] They acknowledged that these figures must be viewed with caution, as many costs were not included, and the potential costs of not providing treatment need consideration.

Despite these estimation exercises, the cost of treatment provision remains unclear, other than it represents a considerable public, and private outlay. Consequently, it is important that programs are as effective as they can possibly be.

1.6 References

1. McLellan, T. & Dembo, R. (1993) *Screening and assessment of alcohol and other drug-abusing adolescents* (Rockville, Center for Substance Abuse Treatment).
2. Mattick, R. & Hall, W. (1993) A treatment outline for approaches to opioid dependence, in: Mattick, R. (Ed.) *Quality assurance in the treatment of drug dependence project* (Canberra, Australian Government Publishing Service).
3. Mattick, R. P. & Jarvis, T. (1993) *An outline for the management of alcohol problems* (Canberra, Australian Government Publishing Service).
4. Griffiths, M., Rauch, A., McKeown, C., Shaw, I. & Ayre, S. (1995) First draft manual of CHASP standards for alcohol, tobacco and other drug services (Brisbane, Alcohol and Drug Branch, Queensland Department of Health).
5. American Psychiatric Association (1994) *Diagnostic and statistical manual of mental disorders* (Washington, DC, American Psychiatric Association).
6. White, H. & Labouvie, E. (1989) Towards the assessment of adolescent problem drinking, *Journal of Studies on Alcohol*, 50, pp. 30-7.
7. Hughes, S., Power, T. & Francis, D. (1992) Defining patterns of drinking in adolescence: a cluster analystic approach, *Journal of Studies on Alcohol*, 53, pp. 40-7.
8. Bukstein, O. & Kaminer, Y. (1994) The nosology of adolescent substance abuse, *American Journal on Addictions*, 3, pp. 1-13.
9. Jessor, R. (1987) Problem-behavior theory, psychosocial development, and adolescent problem drinking, *British Journal of Addiction*, 82, pp. 331-42.
10. Dryfoos, J. (1990) *Adolescents at risk. Prevalence and prevention* (Oxford, Oxford University Press).
11. Kaminer, Y. (1994) *Adolescent substance abuse: a comprehensive guide to theory and practice* (New York, Plenum Medical Book Company).
12. Programme on Substance Abuse (1995) *Street children, substance use and health: training for street educators (draft)* (Geneva, World Health Organisation).
13. Hall, W. (1995) *The demand for methadone maintenance treatment in Australia* (Sydney, National

Drug and Alcohol Research Centre).
14. National Drug Strategy Committee for the Ministerial Council on Drug Strategy (1993) *1993 national drug household survey* (Canberra, Australian Government Publishing Service).
15. Makkai, T. & McAllister, I. (1993) *Patterns of drug use in Australian society. An analysis of national trend data 1985-91* (Canberra, Australian Government Publishing Service).
16. Pols, R. & Hawks, D. (1992) *Is there a safe level of daily consumption of alcohol for men and women?* (Canberra, Australian Government Publishing Service).
17. Commonwealth Department of Health, H. a. C. S. (1994) *Statistics on drug abuse in Australia 1994* (Canberra, Australian Government Publishing Service).
18. Coonie, A., Dobinson, S. & Flaherty, B. (1994) *Survey of drug use by secondary school students* (Sydney, New South Wales Drug and Alcohol Directorate).
19. Levy, S. J. & Pierce, J. P. (1989) Drug use among Sydney teenagers in 1985 and 1986, *Community Health Studies*, 13, pp. 161-9.
20. Oldenburg, B. & Lemon, J. (1992) *Drug use among a cohort of Sydney teenagers in 1985, 1986 and 1988* (Sydney, Department of Public Health, University of Sydney).
21. Lo, S. K., Blaze-Temple, D. & Binns, C. (1989) Perth teenage drug consumption: differences between students and non-students, *Drug Education Journal of Australia*, 3, pp. 119-28.
22. Spooner, C. & Flaherty, B. (1992) *Comparison of data collection methodologies for the study of young illicit drug users* (Sydney, New South Wales Drug and Alcohol Directorate).
23. Spooner, C. & Flaherty, B. (1993) Three data collection methodologies for the study of illicit drug users, *Australian Journal of Public Health*, 17, pp. 195-202.
24. Plant, A., Macaskill, P., Lo, S. K. & Pierce, J. (1988) *Report of the evaluation of the anti-heroin campaign* (Sydney, Sydney University Press).
25. Reilly, C. & Homel, P. (1987) *1986 survey of recreational drug use and attitudes of 15 to 18 year olds in Sydney* (Sydney, New South Wales Drug and Alcohol Directorate).
26. Spooner, C., Flaherty, B. & Homel, P. (1993) Illicit drug use by young people in Sydney: results of a street intercept survey, *Drug and Alcohol Review*, 12, pp. 159-68.
27. Maher, L. (1996) *Illicit drug reporting system (IDRS) trial: ethnographic monitoring component* (Sydney, National Drug and Alcohol Research Centre, University of New South Wales).
28. Darke, S., Hall, W. & Carless, J. (1990) Drug use, injecting practices and sexual behaviour of opioid users in Sydney, Australia, *British Journal of Addiction*, 85, pp. 1603-9.
29. Hall, W. D., Carless, J. M., Homel, P. J., Flaherty, B. J. & Reilly, C. J. (1991) The characteristics of cocaine users among young adults in Sydney, *Medical Journal of Australia*, 155, pp. 11-4.
30. Hando, J. & Hall, W. (1993) *Amphetamine use among young adults in Sydney, Australia* (Sydney, New South Wales Department of Health).
31. Mugford, S. & Cohen, P. (1989) *Drug use, social relations and commodity consumption: a study of recreational cocaine users in Sydney, Canberra and Melbourne. A report to the Research Into Drug Abuse Advisory Committee* (Canberra, National Campaign Against Drug Abuse).
32. Solowij, N. & Lee, N. (1991) *Survey of 'ecstasy' (MDMA) users in Sydney* (Sydney, New South Wales Drug and Alcohol Directorate).
33. Solowij, N., Hall, W. & Lee, N. (1992) Recreational MDMA use in Sydney: a profile of 'ecstasy' users and their experiences with the drug, *British Journal of Addiction*, 87, pp. 1161-72.
34. Darke, S. & Hall, W. (1995) Levels and correlates of polydrug use among heroin users and regular amphetamine users, *Drug and Alcohol Dependence*, 39, pp. 231-5.
35. Young, M. K. (1989) *Evaluation of the NSW needle and syringe exchange program* (Sydney, AIDS Bureau, New South Wales Department of Health).
36. ANAIDUS (1991) *Neither a borrower nor a lender be: First report of the National AIDS and Injecting Drug Use Study, 1989 data collection* (Sydney, Australian National AIDS and Injecting Drug Use Study (ANAIDUS)).
37. Loxley, W., Marsh, A. & Lo, S. K. (1991) Age and injecting drug use in Perth, Western Australia: the Australian National AIDS and Injecting Drug Use Study, *AIDS Care*, 3, pp. 363-72.
38. Bungey, J. & Faulkner, C. (1990) *Adelaide city youth and drugs. Second National Drug Indicators Conference. 12-14 March 1990* (Canberra,).
39. Howard, J. (1993) Taking a chance on love: risk behaviour of Sydney street youth, *Journal of Paediatric Child Health*, 29, pp. S60-5.
40. Porritt, D. (1991) *Report on a survey among 'street kids' in Sydney* (Sydney, Unpublished report).
41. Zibert, E., Hando, J. & Howard, J. (1994) *Patterns of drug use and indicators of harm among persons detained in New South Wales Juvenile Justice centres 1993* (Sydney, Department of

Juvenile Justice).

42. Caplehorn, J. R. M. & Saunders, J. B. (1993) Factors associated with heroin users' AIDS risk-taking behaviours, *Australian Journal of Public Health*, 17.
43. Darke, S., Baker, A., Dixon, J., Wodak, A. & Heather, N. (1992) Drug use and HIV risk-taking behaviour among clients in methadone maintenance treatment, *Drug and Alcohol Dependence*, 29, pp. 263-8.
44. Karadeniz, N. & Hawkings, R. (1995) *Dunsmore House sixth annual report* (Rooty Hill, Dunsmore House, Western Sydney Area Health Service).
45. Miller, R. (1992) A profile of the adolescent drug abuser, Paper presented at the *Winter School in the Sun*, Brisbane.
46. Newcomb, M. & Bentler, P. (1989) Substance use and abuse among children and teenagers, *American Psychologist*, 44, pp. 242-8.
47. Robertson, J., Loegel, P. & Ferguson, L. (1989) Alcohol use and abuse among homeless adolescents in Hollywood, *Contemporary Drug Problems*, 16, pp. 415-53.
48. McKirnan, D. & Johnson, T. (1986) Alcohol and drug use among 'street' adolescents, *Addictive Behaviours*, 11, pp. 201-205.
49. Dembo, R., Williams, L., Fagan, J. & Schmeidler, J. (1993) The relationships of substance abuse and other delinquency over time in a sample of juvenile detainees, *Criminal Behavior and Mental Health*, 3, pp. 158-79.
50. Johnston, L., O'Malley, P. & Bachman, J. (1987) *National trends in drug use and related factors among American high school students and young adults, 1975-1986* (Washington, DC, US Government Printing Office).
51. Center for Disease Control (1992) Alcohol and other drug use among high school students - United States, 1991, *Morbidity and Mortality Weekly Report*, 41, pp. 698-703.
52. Holland, S. & Griffin, A. (1984) Adolescent and adult drug treatment clients: patterns and consequences of use, *Journal of Psychiatric Drugs*, 16, pp. 79-89.
53. Martin, C., Arria, A., Mezzich, A. & Bukstein, O. (1993) Patterns of polydrug use in adolescent alcohol abusers, *American Journal of Drug and Alcohol Abuse*, 19, pp. 1993.
54. National Institute on Drug Abuse (1991) *National survey on drug abuse: population estimates 1990* (Rockville, MD, National Institute on Drug Abuse).
55. Trimble, J., Padilla, A. & Bell, C. (1987) *Drug abuse among ethnic minorities* (Washington, DC, US Government Printing Office).
56. Oetting, E. & Beauvais, F. (1992) Adolescent drug use: findings of national and local surveys, in: Langenbucher, J., McCrady, B., Frankenstein, W. & Nathan, P. (Eds.) *Annual Review of Addictions Research and Treatment*, pp. 37-51 (New York, Pergamon Press).
57. Johnson, B. a. S., Incorporated, (1995) *Epidemiologic trends in drug abuse. Volume 1: Highlights and executive summary* (Rockville, MD, National Institute on Drug Abuse).
58. Hartnoll, R. (1994) *Multi-city study: drug misuse trends in thirteen European cities* (Strasbourg, Coucil of Europe Press).
59. Collins, D. & Lapsley, H. (1996) *The social costs of drug abuse in Australia in 1988 and 1992* (Canberra, Australian Government Publishing Service).
60. Ali, R., MIller, M. & Cormack, S. (1992) *Future directions for alcohol and other drug treatment in Australia* (Canberra, Australian Government Publishing Service).

Appendix I: Summary of substance-use studies

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Table 1: Summary of Australian surveys of population substance use (1988-1994)

Authors	Method	Sample	Substances used	Other findings
NCADA [1, 2]	National household survey	Random sample N (total) = 2,483 14-19 year olds = 531	Substances used in past year: 14-19 year olds and all ages: 14-19 / All cannabis 24 13 amphetamines 4 3 barbiturates 2 2 cocaine 1 1 hallucinogens 5 2 heroin 1 1 inhalants 4 1 ecstasy 3 1	14-19 / All Tobacco: regular smoker 18 23 Alcohol: drink at least once a month 55 70 drank 7-12 drinks in one session 14 8 Injecting: ever injected 2 2 injected in past year 1 1
Levy and Pierce [3, 4]	Longitudinal household survey	Random sample of youths aged 14-19 years N = 996 in 1985 N = 754 in 1986 N = 544 in 1988	Substances used 'now', 1985 and 1988 samples: 1985 / 1988 tobacco 21 29 alcohol 81 90 cannabis 10 9 any other illicits 3 2 amphetamines 3.6 hallucinogens 2.3 * cocaine 1.6 * tranquillisers 1.5 <0 heroin 0.6 * inhalants 0.5 <0.5 * (not provided)	1985 / 1988 Among drinkers: light drinkers 47 32 mod. drinkers 24 36 heavy drinkers 11 22 ever injected not provided
Blaze-Temple et al [5, 6]	Household survey	Random sample of youths aged 13-17 years N=1,105	Substances currently used: alcohol 58 tobacco 26 cannabis 19 glue 5 speed 2 LSD 1 cocaine 1 heroin 1	Drinking frequency: never 22 rare/occasional 46 frequent 32 18% usually drink 5+ drinks when drinking
Cooney, Dobbinson, Flaherty, 1994 [7]	School survey, self-completion	Government and non-government secondary school students in NSW, Years 7-11.	Substances ever used and substances used in last month: Ever / Month alcohol 67 37	Heavy drinkers *(defined as those who consumed at least 5 drinks in a row at least once in previous fortnight)*: 22% (males); 17% (females)

Authors	Method	Sample	Substances used			Other findings
		Age: range=12-17 N=3,828	tobacco cannabis inhalants sedatives* stimulants hallucinogens narcotics IDU *(non-medical use)	38 25 31 10 7 7 4 4	26 14 7 3 3 3 2 2	

Table 2: Summary of Australian surveys of users of illicit substances (1987-1993)

Authors	Method	Sample	Substances used	Other findings
Plant, Macaskill, Lo, Pierce, 1988 [8]	Probability sampling, face-to-face interviews	Criteria: aged 15-30 years, had used an illicit substance in the previous twelve months N=841	Substances used in previous 12 months by the 15-19 year olds (n=185): M F excess alcohol 80 86 cannabis 89 97 pills etc 24 29 hallucinogens 13 7 cocaine 7 6 heroin 2 6 mulitple illicits 30 27	When asked who they would and would not seek help from if they or a friend had a problem with substances, most said they would seek help from existing health services and counsellors, and that they would not seek help from parents (19%) and priests (33%).
Reilly, Homel, 1987 [9]	Recruitment via street-intercept, peer interviewers, face-to-face interviews	Criteria: aged 15-18 years, used at least one illicit substance other than cannabis in previous month N=1,071	Substances used in previous month: 96% alcohol 24% alcohol 4+ times a week 94% cannabis 72% amphetamines 49% cocaine 48% tranquillisers 41% designer drugs 40% hallucinogens 30% barbiturates 23% opioids 21% inhalants	Main reasons for use tended to be because they liked the high (31%) or for social fun (16%). A minority of the sample used substances to cope with negative feelings (7%) or out of boredom (11%). One-quarter of the sample had decreased their substance use and 4% had given up substance use in the previous three months. The main reasons for this were a) health reasons, b) or a concern that took too many c) external circumstances. One-quarter of those who quit (but few of those who cut down) said they did not want or need substances anymore.
Spooner, Flaherty, Homel 1993 [10]	a) Recruitment via street-intercept, peer interviewers, face-to-face interviews b) advertised telephone ring-in, c) focus groups recruited via advertisements and youth workers	Criteria: aged 16-21 years, used at least one illicit substance other than cannabis in previous three months. Quota: minimum 100 IDUs (161 IDUs recruited) Total N=581	Substances used in past: three months / one month cannabis 93 85 amphetamines 61 36 hallucinogens 40 22 ecstasy 36 23 sedatives 31 22 inhalants 20 12 cocaine 20 11 heroin 15 12 alcohol consumption: 94% current drinkers 40% 3 or more days week	*Frequency of use* of amphetamines, hallucinogens, ecstasy, sedatives, inhalants and cocaine by the majority of users was infrequent: monthly or less. On the other hand, cannabis and heroin was used more than weekly by about half of users. Polysubstance use was associated with use of heroin or cocaine, not with the use of amphetamines. 11% had received treatment for a substance use problem. Substances for which treatment was received were heroin (58%), amphetamines (31%), sedatives (29%) and hallucinogens (16%). Main forms of treatment were counselling (34%), inpatient services (32%), methadone (29%) or detoxification (29%).

Authors	Method	Sample	Substances used	Other findings
			27% usually consumed 5+ drinks when they drank	

Table 3: Summary of Australian surveys of users of specific illicit substances (1990-1994)

Authors	Method	Sample	Substances used	Other findings
Darke, Hall, Carless, 1990 [11]	Recruitment via advertisements in drug treatment services and needle exchanges, structured interviews at agencies	Criteria: use of heroin in the previous six months Age: range 19-42; mean=28 N=100	Use in past month: 71% heroin 21% other opioids 63% alcohol 68% cannabis 10% amphetamines 29% cocaine 56% tranquilliser 3% barbiturates 11% hallucinogens 3% inhalants 94% tobacco	59% were currently enrolled in treatment (_). Differences in injecting behaviours in the previous month between those in treatment (_ and those not in treatment (non-_) were: _ Non-_ had injected a substance 77 98 shared a needle (used after others) 17 46 always clean the needle (base=those who shared) 79 94 Sexual behaviour: in last month, 78% had had sex, 30% had >1 partner, 10% engaged in prostitution, 21% of those who engaged in casual sex never used a condom. The only significant predictor of sexual risk-taking behaviour was the subject's age: younger IDUs engaged in more risk-taking behaviour.
Hall, Carless, Homel, Flaherty, Reilly, 1991 [12]	Random digit dialling telephone survey	Quotas for gender, age and substance use: approx. 50 cocaine users, 100 non-illicit substance users, 300 potential illicit drug users (ever tried or been offered at least one illicit substance) Age: 14-35 N=499	Per cent ever tried a substance, cocaine users (n=65) versus non-users (n=434): Non-users Users alcohol (daily use) 12 29 cannabis 54 89 sedatives 8 51 designer drugs 6 52 amphetamines 9 74 heroin 1 34	Cocaine use unlikely to boom in Australia
Hando, Hall, 1993 [13]	Purposive sampling: recruitment via drug-treatment centres and other health sources (n=32), advertisement, peer referral, street-intercept and other sources (n=199). In-depth, structured face-to-face interviews.	Criteria: used amphetamine at least once in the previous twelve months. Age: range=15-49, median=24 N=231	Substances ... used last month[9] ever injected by injectors (n=105) 100% amphetamines 100 86% cannabis 77% alcohol 30% hallucinogens 24 32% tranquillisers 23 14% amyl nitrate	Major reasons for using amphetamines: for the effect (the rush/to feel good) (81%), have more energy, stay awake (78%), to party and have fun (72%), to help with work or study (31%) and/or to relieve boredom (25%). Usual route of administration: inject (55%), snort (30%), ingest (13%). Age first used: median=17 years 51% females and 25% males defined as suffering a psychiatric disorder. 36% classified as dependent on amphetamines.

[9] Use in last 6 months and ever also available from the report

Authors	Method	Sample	Substances used	Other findings
			2% other inhalants 13% cocaine 58 15% MDMA 24 22% heroin 95 10% other opioids 70 4% diet pills 21 6% cough medicines 4% barbiturates 45 Preferred substances: 29% amphetamines 28% cannabis 17% heroin 9% hallucinogens Frequency of use: 57% used amphetamines fortnightly or less often. Polysubstance use: Median number of substances used in past month= 3.5	As a result of amphetamine use, respondents had experienced problems with finances (58%), sex (43%), relationships with partner (39%), friends (37%), or family (36%), the law (29%) and/or work (16%). 34% had received treatment for a substance-use problem, 24% were currently in treatment (mostly methadone-maintenance). 41% had felt a need for treatment for an amphetamine-related problem at some time, _ had sought help from a drug-treatment service, a GP or a psychiatrist. 35% of IDUs had shared needles. 26% had ever been imprisoned, 21% had been in a juvenile institution, 39% had been arrested for a substance related offence. Relative to those with no experience of treatment, those with treatment experience were more likely to be older, less educated, unemployed, more frequent users of amphetamines, to use a greater number of substances, to report symptoms of amphetamine use and have a criminal history and less likely to share when injecting.
Moore, Saunders, Hawks, 1992 [14]	Ethnographic methodology	Recreational illicit substance users Age: mostly 11-22 N=30	High rates tobacco use and alcohol; 'enormous' amounts of alcohol sometimes consumed particularly by males when speeding. Cannabis use common. Cocaine, ice and heroin not used much because expensive and effects of latter 2 not liked.	Some social controls on substance use exist, depending upon the perceived danger of the substance. However, rules are not always followed. Some ambivalence exists towards 'junkies' as desirable or undesirable.
Mugford, Cohen, 1989. [15] [16] [17]	Snowball sample. Self-completion questionnaire followed by in-depth interview. Sample mostly male, single, educated.	Criteria: used cocaine within at least last eighteen months Age: range=18-49, mean=28, median=26 N=72	72% current cocaine use 64% cocaine use in past three months 40% weekly cocaine use 31% ever injected cocaine	Sample included recreational users: they appear to be in control of their use, to be reasonably healthy, happy and well adjusted, but to have a sharply different lifestyle to the general popultion. For example, tend to be unmarried, no religion, not support mainstream political parties. Most used other substances. Women less likely than men to seek cocaine actively, more likely to receive it. Cocaine use seen not as pathological, as part of a hedonistic ethic.
Solowij, Hall, Lee, 1992 [18, 19]	Snowball, self-completed and mail-returned	Criteria: used ecstasy at least once.	Currently use...	Average consumption of alcohol: 3 to 4 drinks, 2 to 3 days a week.

Authors	Method	Sample	Substances used	Other findings
	questionnaire	Age: range=16-48, Mean=27 N=100	77% cannabis 47% amphetamines 38% hallucinogens 28% amyl nitrate 26% cocaine 11% barbiturates 5% tranquillisers 5% heroin 3% other opioids 0% inhalants	Ecstasy is not conducive to regular and frequent use, making its abuse potential quite low.

Table 4: Summary of Australian surveys of injecting drug users (1989-1991)

Authors	Method	Sample	Substances used	Other findings
ANAIDUS, 1992 [20] Sydney (n=1245), Perth (n=196), Melbourne (n=356), Brisbane (n=685)	(Some variation between cities) Recruitment via snowball, referrals, approaches to acquaintances and methadone clients and advertising; face-to-face interviews in health service buildings, coffee shops, respondents' homes.	Criteria: had injected substances within the past 2 years Age: range=13-72, Mean=27 N=2,482	Substance use during a typical month: via injection (Inj) and via other means (Oth): Inj Oth heroin 69 1 methadone 5 12 codeine 3 8 amphetamines 32 3 LSD 2 6 ecstasy 2 3 cocaine 9 <1 barbiturates 1 9 benzodiazepines 2 33 alcohol 0 66 cannabis 0 72 nicotine 0 81	36% had been in prison 58% had current or previous experience with treatment for substance-related problems (most current treatment=methadone).
Loxley, Marsh, Lo, 1991 [21]	Recruitment via advertising, referrals by staff at treatment and other agencies, direct approach to individuals, snowball. Face-to-face interviews in health service buildings, coffee shops, respondents homes.	Criteria: had injected substances within the past 2 years Age: <23 years:n= 44 ≥23 years:n=151	Substances injected at least once a month: <23 ≥23 heroin 32 83 amphetamine 91 35 Substances used (not injected) at least once a month: <23 ≥23 methadone 5 32 LSD 16 1	Relative to older IDUs, younger IDUs: used more stimulants and LSD used fewer opioids and benzodiazepines were more likely to inject all or most of their substances were less likely to have been in treatment had more sex partners were less likely to have changed their substance-taking behaviour because of AIDS were less likely to use alone shared needles less frequently, but shared at least some of the time had less knowledge of AIDS were more pessimistic about the long-term outcomes of AIDS.
MSJ Keys Young, 1989 [22]	Public clients of the Needle and Syringe Exchange Program (NSEP): choice of administerion by self, NSEP staff or study team.	Clients of NSEP outlets Age: ->19: 17% 20-24: 26% 25-29: 29% 30-39: 26% 40->: 2% N=135	Substances most commonly injected and other substances injected: Most Other heroin 73% 11% speed 19% 12% cocaine 6% 20% other 0 11% nothing - 57%	Younger occassional IDUs are not using NSEPs, as well as older, more habitual IDUs. Younger IDUs tend to not want to keep injecting equipment at home.

Table 5: Summary of Australian surveys of high risk groups (1990-1994)

Authors	Method	Sample	Substances used	Other findings
Bungey, Faulkner, 1990 [23]	Recruitment via inner city health and welfare agencies, data collection via structured interview schedule administered by youth workers from each agency.	Service users Age: range=12-25 N=254	In the previous month: -92% drank alcohol -20% males and 4% females drank alcohol daily Substances used in previous month: 80% cannabis 24% hallucinogens 20% amphetamines 18% non-prescription 17% benzodiazepines 14% inhalants 13% barbiturates 9% heroin 7% other tranquillisers 5% cocaine 4% designer drugs 2% crank Injecting: 34% had ever injected 18% in the last month: - 7% injected heroin - 10% injected amphetamines 38% IDUs share needles	Reasons for use: to get high 37%, to escape reality 20%, relaxation 12%, something to do 11%, peer pressure 8%, other 12%. Problems as a result of alcohol use: more than 20% cited: arguments, fights, arrest. Problems as a result of substance use: more than 20% cited arguments, fights, getting arrested, losing friends, working less, emotional health problems, financial problems, legal problems and/or overdose. Perceived need for help: more than 20% cited: getting a job, job training, filling in spare time, legal problems, dental problems, housing, personal problems, family problems, money. 33% males and 12% females wanted help with food. Just on 20% cited that they wanted help with substance problems. 24% females and 7% females admitted they had been sexually touched by a member of the family. 70% of the sample reported alcohol and/or substance abuse in their family. Males were more likely than females to engage in crime to obtain money for substance. more than 20% sample had engaged in shoplifting, robbery, car theft, housebreaking, assault, dealing and begging.
Howard, 1991 [24]	Snowball sampling, starting with services whose clientele and contacts comprised young people who had left home and 'homeless', for example, living in refuges, supported accommodation	Homeless youth Age: range=13-20, mean=17 N=192	Polysubstance use was the norm. The per cent who had ever used and the per cent who had ever used regularly or heavily (misused): used misused nicotine 94 90 alcohol 90 75 cannabis 87 79 pain relievers 78 54	The majority reported physical and sexual abuse; violence and negative relationships as major factors in leaving home. About half had a family member who had a substance problem. Those who had been sexually abused were significantly more likely to engage in prostitution (48%) than those who had not been sexually abused (22%). Crime, prostitution (30% of males; 45% of females) and Social Security benefits were their main means of survival. Safe sex practices were not common, except when prostituting. 28% saw their current substance use as a problem. About one-quarter of IDUs admitted to sharing needles, 80% of those who shared were also engaged in prostitution. Most did not like themselves and reported symptoms of emotional distress/disturbance and that there was not much point of living and that they were bored with their lives.

Authors	Method	Sample	Substances used	Other findings
			sleeping tablets 71 38 anti-anxiety 61 36 other medicine 64 32 stimulants 64 36 hallucinogens 59 36 narcotics 54 34 inhalants 37 14	Suicide attempts had been made by 82% of females and 61% of males. Substances were perceived as an opportunity to feel good and to deal with boredom. 31% talked frequently to street workers and they were not really trusted by most. 52% of females claimed to have been pregnant at least once, 54% of males claimed to have caused at least one pregnancy.
Porritt, 1991 [2]	Face-to-face interviews by 1 experienced interviewer and 2 peer interviewers (people in their early twenties who had experienced similar lifestyles to respondents) Snowball sampling with entry points including drop-in centres and approaches to strangers. $10 payment to respondents.	Sydney street-kids: 14 to 19 year olds actively involved with others of similar age in a social network which included a substantial proportion who a) currently lacked secure shelter (living in a squat, on the street or in termporary emergency accommodation) and/or b) were moving from place to place, largely with friends and acquaintances N=82	Substance use in past year and past three months: **year 3mth** cannabis 93 89 amphetamines 71 60 barbiturates 41 29 cocaine 43 27 hallucinogens 61 49 heroin 38 29 inhalants 62 54 ecstasy 52 43 self-injected 54 43 Average number of substances used=6.3 Among injectors: 58% had injected within the previous week, 27% had injected that day, 40% described themselves as daily injectors.	76% were unemployed. Exposure to, and acceptance of, substance use was high; however, there was some concern about the adverse effects of alcohol and substance misuse on themselves and on society. Tobacco and cannabis, however, were seen as benign. While current illicit substance use tended to oscillate ('use when possible'), shifts to heavy use or to non-use were possible. This report specifically compares results with a random sample of 14-19 year olds. Relative to the random sample, street-kids: - start tobacco and alcohol use at a younger age - drank alcohol more frequently and usually drank a larger number of drinks - more likely to get information about substances from friends and from drug services (mainly the NSEP). *If you or anyone you know needed help for a drug or alcohol problem which of these facilities or services would you use?*: - half-way house 37% - in-patient, hospital 37% - in-patient, community care 34% - methadone program 39% - telephone counselling 49% - other drug counselling 39% - none 9%
Zibert, Hando, Howard, 1994 [25]	Structured interviews by researchers in JJ facilities	Young persons detained in JJ facilities. Age: mean=16.6 96% male 35% indigenous Aust^{n} 8% Asian background 74% no school certificate N=279	Substances used in month before incarceration: 81% tobacco 76% alcohol 75% cannabis 33% pain relievers 29% other medicines 19% sedatives 18% amphetamines 18% hallucinogens 10% opioids 7% cocaine	90% of detainees had been found guilty of a previous offence. Types of offences ever committed: property crime (92%), selling illicit substances (47%), fraud (28%), violent crimes (69%). 29% had lived in the one place in the six months before detention. Most described parents and friends as supportive. Length of time in dentention on control: range=1 week to 3½ years; median = four months. Reasons for non-medical use of substances: to feel good, to party/have fun, curiosity and boredom. Licit (11 years) and illicit (13 years) substances were used from a young age. 24% regarded themselves as having a current problem with their use of substances. 49% stated they previously had a problem with substance use. 93% reported that at least one peer uses the same substances as the respondent; 34% of ESB and 26% of indigenous Australian respondents said all

Authors	Method	Sample	Substances used	Other findings
			7% ecstasy 3% amyl nitrate/nitrous oxide 7% other inhalants Number of standard alcoholic drinks consumed on a typical drinking day: median=16; mean=25. Group differences in means: indigenous Aust^{n} ..... 36 English speaking background (ESB)..... 21 Asian speaking background (ASB)..... 7	peers use the same substances. 22% had attempted suicide: 27% of ESB, 21% of indigenous Australians, 5% Asian background, 14% other NESB. 78% injected while intoxicated with other substances. 30% believed they needed treatment for a substance problem. 25% had participated in drug treatment, mainly counselling. Preferred drug treatments: counselling (52%), NA (22%), residential detoxification such as Dunsmore House (20%), residential treatment such as the TNF or Odyssey (19%). Of those who had experienced residential treatment (5% of the sample, n=13): 62% left because there were too many rules, 46% felt the program did not suit them, 46% left because there was too much confrontation, 39% felt they were just not ready. 54% returned to the residential treatment after leaving for any of the above reasons. 39% were discharged for breaking the rules. 16% felt they needed drug treatment while in custody. 36% of this group were receiving treatment, mainly counselling. Preferred treatment while in detention were counselling (70%), residential rehabilitation (22%), residential detoxification (5%). None mentioned NA or methadone.
Zibert, Hando, Howard, 1994 [25] contd			24% had injected substances: indigenous Aust^{n} ..... 17 ESB..... 33 NESB ..... 9 37% of injectors had shared needles: indigenous Aust^{n} ..... 29 ESB..... 41	

Table 6: Summary of Australian surveys of clients at drug services (1989-1995)

Authors	Method	Sample	Substances used	Other findings
Caplehorn and Saunders, 1993 [26]	Service based survey: Detox. registrations	Heroin-dependent clients Age: range=17-42, mean=28 N=74	81% heroin 11% amphetamines 16% benzodiazepines	
Darke, Hall and Carless, 1990 [11]	Volunteers to advertisements at services including needle exchange	Criteria: used heroin in previous six months Age: range=19-42 N=100	In previous month: 71% heroin 10% amphetamines 29% cocaine 56% tranquillisers	
Darke, Baker, Dixon, Wodak and Heather, 1992 [27]	Service-based survey. Methadone program	Methadone clients Age: range=17-45, mean=31 N=95	In previous month: 66% heroin 12% amphetamines 17% cocaine 61% tranquillisers	
Drug and Alcohol Directorate, 1989 [28]	Data collected on admission at residential non-government drug treatment agencies funded by the New South Wales Drug and Alcohol Directorate	Residential treatment agency clients Age: mean=28.5(M); 26.7(F) median=27.0(M); 25.0(F) No. of admissions: M=2062, F=904 (clients can be admitted more than once)	Primary substance problems by gender: M F opioids 59 60 alcohol 27 18 stimulants 7 5 benzodiazepines /barbiturates 1 6 cannabis 2 <1 cocaine 1 1 methadone <1 1 all others: 2 8 Total 100 100	
Karadeniz and Hawkings, 1995 [29]	Standardised assessment interview at Dunsmore House: a short-term residential drug-treatment centre for adolescents.	Clients of Dunsmore House 1989-95 Age: range=13-20, most=16-18 N=818 clients, 1481 admissions	Most are polysubstance users. Main substance of abuse: (estimated from tables) Female Male alcohol 20 **28** opioids **31** 18	Between 1989 and 1995, there was a steady decrease in alcohol as the main substance of abuse (37% to 16%) and an increase in cannabis as the main substance of abuse (12% to 32%). 1994-95 also saw a sharp increase in heroin as the main substance of abuse from 12% in 1992-3 to 29% in 1994-5. Younger clients tend to be female, older clients tend to be male. Living situation before first admission: There has been an increase in recent years in clients coming to the program from home (51% males, 39%females), often as a

Authors	Method	Sample	Substances used	Other findings
			amphetamines 19 9 cannabis 19 **31** benzodiazepines 7 2 solvents 5 1 avils 2 1 cocaine 3 2 hallucinogens 1 2 designer drugs 1 1	means of reconciliation with the family. Others have come from refuges (17% males, 31% females), the street (19%), independent accommodation (16%) or an institution (M 9%, F 5%). A history of physical abuse (30% males, 55% females), sexual abuse (11% males, 60% females) and incest (2% males, 15% females) is common but is likely to be under-reported. About half of the sample has attempted suicide (49% males, 60% females). Another fifth of the sample has contemplated, but not attempted suicide (32% males, 24% females).
Karadeniz and Hawkings, 1995 contd				From [30]: Substance of abuse is not necessarily the substance of choice. The substances of first or second choice for clients tended to be alcohol (45%), heroin (33%) cannabis (32%), or amphetamines (21%). Heroin and amphetamines are used almost exclusively by injection. Reasons for substance use: to forget bad memories or worries (33%), for the substancs' effects (12%), to relax (9%), to increase confidence (8%), because bored (3%). 60% family history of substance abuse (usually alcohol, alcohol abuse usually associated with violence). 72% did not achieve a school certificate, severe literacy and numeracy deficits common; however, most report dropping out or being expelled because of disciplinary and substance-use problems, rather than academic difficulties. 72% of males and 60% of females report a criminal history, mainly theft and violence. 66% of males and 45% of females have a legal history (court appearances past and/or pending). Males are more than twice as likely as females to be referred to Dunsmore House by the legal system, females tend to be referred by welfare agencies. Often court pending is the major source for males to seek treatment. Referrals: counsellor/refuge/drug-treatment program (45%), self (35%, includes re-admissions), family (5%), doctor (4%), legal/police (11%). 59% had previous drug treatment: 40% outclient, 32% residential, 13% both. 22% of clients are asked to leave, 58% split prematurely, 24% leave after 14 days with a plan.

References

1. Makkai, T. & McAllister, I. (1993) *Patterns of drug use in Australian society. An analysis of national trend data 1985-91* (Canberra, Australian Government Publishing Service).
2. Porritt, D. (1991) *Report on a survey among 'street kids' in Sydney* (Sydney, Unpublished report).
3. Levy, S. J. & Pierce, J. P. (1989) Drug use among Sydney teenagers in 1985 and 1986, *Community Health Studies*, 13, pp. 161-9.
4. Oldenburg, B. & Lemon, J. (1992) *Drug use among a cohort of Sydney teenagers in 1985, 1986 and 1988* (Sydney, Department of Public Health, University of Sydney).
5. Blaze-Temple, D., Lo, S. K. & Binns, C. (1990) Drug use behaviour and attitudes from a household survey of Perth teenagers, Paper presented at the *Winter School in the Sun*, Brisbane.
6. Lo, S. K., Blaze-Temple, D. & Binns, C. (1989) Perth teenage drug consumption: differences between students and non-students, *Drug Education Journal of Australia*, 3, pp. 119-28.
7. Coonie, A., Dobinson, S. & Flaherty, B. (1994) *Survey of drug use by secondary school students* (Sydney, New South Wales Drug and Alcohol Directorate).
8. Plant, A., Macaskill, P., K., L. S. & Pierce, J. (1988) *Report of the evaluation of the anti-heroin campaign* (Sydney, Sydney University Press).
9. Reilly, C. & Homel, P. (1987) *1986 survey of recreational drug use and attitudes of 15 to 18 year olds in Sydney* (Sydney, New South Wales Drug and Alcohol Directorate).
10. Spooner, C., Flaherty, B. & Homel, P. (1993) Illicit drug use by young people in Sydney: results of a street intercept survey, *Drug and Alcohol Review*, 12, pp. 159-68.
11. Darke, S., Hall, W. & Carless, J. (1990) Drug use, injecting practices and sexual behaviour of opioid users in Sydney, Australia, *British Journal of Addiction*, 85, pp. 1603-9.
12. Hall, W. D., Carless, J. M., Homel, P. J., Flaherty, B. J. & Reilly, C. J. (1991) The characteristics of cocaine users among young adults in Sydney, *Medical Journal of Australia*, 155, pp. 11-4.
13. Hando, J. & Hall, W. (1993) *Amphetamine use among young adults in Sydney, Australia* (Sydney, New South Wales Department of Health).
14. Moore, D., Saunders, B. & Hawks, D. (1992) *Recreational drug use, with particular reference to amphetamines, ecstasy and LSD, among a social network of young people in Perth, Western Australia* (Perth, National Centre for Research into the Prevention of Drug Abuse).
15. Mugford, S. & Cohen, P. (1989) *Drug use, social relations and commodity consumption: a study of recreational cocaine users in Sydney, Canberra and Melbourne. A report to the Research Into Drug Abuse Advisory Committee* (Canberra, National Campaign Against Drug Abuse).
16. Mugford, S. (1988) The significance of recreational drug users: the example of the cocaine study, Paper presented at the *First National Drug Indicators Conference*, Canberra.
17. Mugford, S. (1994) Recreational cocaine use in three Australian cities, *Addiction Research*, 2, pp. 95-108.
18. Solowij, N., Hall, W. & Lee, N. (1992) Recreational MDMA use in Sydney: a profile of 'ecstasy' users and their experiences with the drug, *British Journal of Addiction*, 87, pp. 1161-72.
19. Solowij, N. & Lee, N. (1991) *Survey of 'ecstasy' (MDMA) users in Sydney* (Sydney, New South Wales Drug and Alcohol Directorate).
20. ANAIDUS (1991) *Neither a borrower nor a lender be: First report of the National AIDS and Injecting Drug Use Study, 1989 data collection* (Sydney, Australian National AIDS and Injecting Drug Use Study (ANAIDUS)).
21. Loxley, W., Marsh, A. & Lo, S. K. (1991) Age and injecting drug use in Perth, Western Australia: the Australian National AIDS and Injecting Drug Use Study, *AIDS Care*, 3, pp. 363-72.
22. Young, M. K. (1989) *Evaluation of the NSW needle and syringe exchange program* (Sydney, AIDS Bureau, New South Wales Department of Health).
23. Bungey, J. & Faulkner, C. (1990) *Adelaide city youth and drugs. Second National Drug Indicators Conference. 12-14 March 1990* (Canberra,).

24. Howard, J. (1991) Dulling the pain: two surveys of Sydney street youth, Paper presented at the *Ninth National Behavioural Medicine Conference*, Sydney.
25. Zibert, E., Hando, J. & Howard, J. (1994) *Patterns of drug use and indicators of harm among persons detained in New South Wales Juvenile Justice centres 1993* (Sydney, Department of Juvenile Justice).
26. Caplehorn, J. R. M. & Saunders, J. B. (1993) Factors associated with heroin users' AIDS risk-taking behaviours, *Australian Journal of Public Health*, 17.
27. Darke, S., Baker, A., Dixon, J., Wodak, A. & Heather, N. (1992) Drug use and HIV risk-taking behaviour among clients in methadone maintenance treatment, *Drug and Alcohol Dependence*, 29, pp. 263-8.
28. Directorate, D. a. A. (1990) Clients at non-government drug treatment agencies. Monograph No. 13, in: Tebbutt, J., Muir, C. & Heather, N. (Eds.) *Drug Use Trends in New South Wales*, pp. 44-5 (Sydney, National Drug and Alcohol Research Centre, University of New South Wales).
29. Karadeniz, N. & Hawkings, R. (1995) *Dunsmore House sixth annual report* (Rooty Hill, Dunsmore House, Western Sydney Area Health Service).
30. Miller, R. (1992) A profile of the adolescent drug abuser, Paper presented at the *Winter School in the Sun*, Brisbane.

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2 Causes of drug abuse

2.1 Introduction

Prevention and treatment programs are generally based upon known risk factors for substance misuse. Programs can seek to directly change risk factors or promote protective factors. [1] There have been a large number of studies of the risk factors for substance use and misuse [1, 2], but there is still much contradiction among studies [3]. This section briefly reports the main conclusions for which there seems to be some support. Before summarising such reviews, some issues about risk factors are briefly discussed.

2.1.1 Causes of use?

The aetiology of substance abuse is complicated for a number of reasons. Firstly, we need to distinguish variables that:

- are associated with substance abuse (precede, follow, or co-exist with substance use), but are not causally related, for example, because both are 'caused' by some other factors (that is, correlates)
- contribute to substance abuse (that is, risk factors)
- mediate or moderate risk factors (that is, protective factors) [4, 5]
- are caused by substance abuse (that is, consequences)
- are contributors to substance use, as well as consequences of substance use: research by Farrell has indicated that some risk factors could be a cause <u>and</u> a consequence of substance use, leading to an escalating cycle of involvement in substance use. [6]

Second, risk factors are not always risk factors: different risk factors are salient at different times in the development of adolescents. For example, poor academic achievement in Grades 1 and 2 have not been found to be predictive of adolescent substance misuse, but poor performance has been found to be predictive when evident in later grades. [7] Third, there is no single pathway to the development of problem substance use. [6, 8] The number of risk factors has been found to be more predictive of subsequent substance use and misuse than any individual risk factor. [9, 10]

In summary, a variable that is associated with substance abuse could be a risk factor, a protective factor, a correlate and/or a consequence; and that relationship can change over time. Furthermore, it is the net effect of the combination of risk factors and protective factors, rather than any individual risk factor that predicts substance abuse. Simple answers to the question 'what causes substance abuse?' do not exist.

2.1.2 Aetiology of use versus abuse

The aetiology of substance use is not the same as the aetiology of substance abuse, and might even vary for the abuse of particular substances. This notion has been supported by Stein and colleagues' analyses of their longitudinal study of substance use by American students that indicated that substance use and problem substance use are differentially determined. [11] Gorsuch noted that researchers no longer:

> . . . assume that initial drug use and drug addiction have the same causes. Admittedly, some theories do take a single-stage, 'take it once and hooked for life' approach. However, we found the evidence strong that many who do have an initial experience with a particular drug do not become continual users, and that many who become continual users do not become addicts. Hence, the causes for each stage may be different, and a set of stages is necessary. [12] (p. 20)

It is argued, for example, that the use of substances occurs as a result of social influences, whereas problematic substance use results from psychological processes such as self-medication from emotional distress. [13] The following literature review emphasises risk factors for substance misuse, rather than for initiation of substance use.

2.1.3 Problem behaviour

It becomes evident throughout this section that risk factors and protective factors for substance abuse also influence other problem behaviours. [14, 15] Consequently, substance abuse tends to

co-exist with other problem behaviours and each problem behaviour can exacerbate other problem behaviours. This issue is further discussed at the end of this section.

2.1.4 Order of presentation

The order of presentation of factors that contribute to substance abuse does not reflect the importance of those factors, but it does reflect an attempt to discuss those factors that are pertinent earlier in adolescents' lives (such as genetic factors) before factors that tend to be more pertinent later in their lives (such as being labelled as a 'drug addict'). This system of presentation has been used as a means of portraying the cumulative effects of risk factors from birth to adolescence. It also reflects the notion that risk factors (for example, personality) can contribute to the development of subsequent risk factors for substance abuse (such as antisocial behaviour). That is, the risk factors do not exist in isolation.

So the review is based upon a chronological viewpoint as follows. We are born with a certain genetic make-up that affects our predisposition towards gender, personality, and substance abuse. As we grow up, we are exposed to family factors, possibly childhood abuse, within an environment influenced by our ethnic background, socio-economic status and macro-environmental factors. As a result of the combination of genetic predisposition and this upbringing, our mental health, knowledge and coping skills develop, as do our peer relationships. School problems, antisocial behaviour, and/or early substance use could become evident. Problems might be exacerbate with the onset of adolescence when some adolescents could eventually become labelled as 'drug abusers'. Finally, as substance users,substance variables can come into play. Life-courses are not as simple as this description might imply. However, it is hoped that the ordering of risk factors, using this hypothetical chronological sequence, can assist readers to make sense of the myriad of factors that affect the outcome of interest: substance abuse in adolescence.

2.2 Genetic factors

Research since the mid-1960s on substance use has supported the view that genetics play a modest, but significant, role in the development of substance-use problems in some individuals. [16-18] For example, Cadoret reports the results of research that has indicated that genetic factors are influential in the transition from substance use to substance misuse. [19] However, most such work has been in the area of alcoholism, largely because of the high prevalence of alcoholism compared to illicit substance misuse. After reviewing the literature on behavioural genetic research in relation to alcoholism, McGue concluded: [20]

- genetic factors exert a moderate influence on male and female risk for alcoholism
- the genetic diathesis that underlies male alcohol abuse is not specific to problems with alcohol, but also includes other manifestations of behavioural under-control
- environmental factors that are shared by family members can exert a significant influence on both male and female risk for alcoholism
- rearing by an alcoholic parent does not appear to be a critical factor to the development of alcoholism
- the specific genes involved in the pathophysiology of alcoholism, although not as yet identified, are likely to represent a wide range of underlying mechanisms.

Bigelow and colleagues discussed the treatment implications of biological vulnerability to substance abuse and concluded that the state of knowledge is currently insufficient to assist treatment matching. [21] Perhaps, these authors state, biological vulnerability has more implications for prevention than for treatment. In summary, genetic predisposition appears to be a contributing risk factor to problematic alcohol and probably other substance use, however, other factors can exacerbate or moderate the influence of genetics.

2.3 Gender

In general populations, males tend to a) start drinking alcohol at an earlier age than females,

and b) be more likely than females to drink alcohol, to drink heavily, and to experience alcohol-related problems. [22, 23] For example, a household survey of 1,000 adolescents in Sydney found that males were twice as likely as females to be heavy drinkers and four times as likely to report cannabis use. [24] Other illicit substance use was too minimal to detect gender effects. The gender effect is probably the result of both genetic and environmental factors. The main treatment implication is the need to address gender-specific influences on alcohol and other substance use, particularly with males.

2.4 Attitudes and personality traits

Control theory posits that deviance arises when adolescents lack sufficient ties with conventional social groups such as the family, schools, and churches. [25] Specifically, alienation from the prevailing values of society have been associated with substance use. [26, 27] Personality traits that reflect a lack of social bonding and that have been found to be predictive of early or frequent substance use include (in no particular order):

- rebelliousness [28, 29]
- non-conformity to traditional values [11, 30]
- low sense of social responsibility [31]
- high tolerance of deviance [27, 29]
- resistance to traditional authority [32]
- a strong need for independence [30]
- normlessness [33]
- 'contracultural' values: a complete disengagement from mainstream culture as indicated by numerous indicators such as low school commitment, unconventional dress, non-conformist values, and peer substance-using culture [34]
- alienation and health-compromising behaviours, particularly smoking and alcohol misuse [35].

Conversely, conventionality or ties to society (being cooperative, eager to please, physically cautious, neat, and reserved) among three-year-olds has been associated with non-problematic substance use in later life. [36]

Calabrese has written extensively on how a sense of *alienation* contributes to a range of physical and emotional health problems [37] and behavioural problems such as substance abuse and delinquency [38, 39]. Calabrese has depicted alienation as follows: 'In general, alienation describes the relationship of individuals to their environment, and specifically, it describes that relationship in terms of isolation, meaninglessness, normlessness and powerlessness.' [37] (p. 14) Calabrese has noted that these feelings need to be countered before any positive behavioural changes can be initiated or maintained. Calabrese argues that alienation is caused by societal forces that alienate adolescents and that adolescents respond by forming supportive subcultures which reject the norms of society, establish their own models to worship and centre on self-gratification. Adolescents, suggests Calabrese, need a more 'human' environment which facilitates assimilation into responsible societal activities, provides them with a sense of meaning and real enfranchisement into the decision-making process. Research conducted by Calabrese and Schumer has indicated that involvement of adolescents in community service activities can reduce their sense of alienation. [40]

These personality traits have been found to be associated not just with substance abuse, but with a broader spectrum of health-problem behaviours. For example, Donovan, Jessor and Costa have found that *conventionality* is related not just to substance use, but to all health behaviours. [41] That is, there is a problem-behaviour syndrome at one end of the spectrum,and a set of health behaviours on the other end, and conventionality helps determine where an individual is placed on that spectrum. Specifically, they found that a) psychosocial conventionality correlated with more involvement in health-related behaviour (for example, physical activity, attention to a healthy diet) and b) less involvement in problem behaviours (such as cannabis use, problem drinking, or delinquency) was also associated with greater

involvement in health-behaviours. Donovan and colleagues noted that 'at-risk' adolescents might be particularly resistant to efforts to encourage them to 'be healthy' if being healthy is seen as conventional:

> . . . the findings showing that unconventionality is linked to less involvement in health-maintaining behavior suggest that those youth who are most unconventional, that is, the so-called high-risk youth, may be in double jeopardy. Not only does their unconventionality place them at greater risk for engaging in health-compromising problem behavior, but it also may lead them to eschew health-maintaining behavior to the extent that the latter is seen as conventional. Insofar as conventionality is linked to the concept of health, those youth who could benefit most from efforts at health promotion may be the very ones most resistant. (p. 60)

Another personality trait linked with substance abuse is sensation-seeking. [42] However, as sensation-seeking is normative in adolescence and can be a positive source of motivation, it does not appear to be reasonable to recommend that programs try to stifle sensation-seeking. Perhaps the most reasonable option is to help to channel this energy into activities that are equally attractive, but less risky or harmful than substance abuse.

In summary, evidence suggests that alienation from society can contribute to problematic substance use and it is likely to be a significant barrier to adolescents wanting to address that substance use, or any other problem behaviours. Programs that facilitate societal bonding can assist adolescent-clients' motivation to engage in prosocial and health-enhancing behaviours.

2.5 Family factors

The influences of the family on adolescent substance abuse are fundamentally important, but complex. [43, 44] Factors about the quality and consistency of family management, family communication, family relationships and parental role-modelling have been consistently identified as predictive of substance use and substance misuse as listed below [45]:

a) ineffective parental family management techniques, for example, lack of discipline, or inconsistent discipline [46]
b) negative communication patterns (blaming, criticism) [45]
c) poor family relationships:
   - negative family relationships [47, 48]
   - low bonding to family [49]
   - the sharing of affection and communication with children, parental interest in the children's activities [50]
   - child abuse [51]
d) parental role-modelling:
   - parental criminality or antisocial behaviour [45]
   - parental substance use [52, 53]
   - perceived adult substance use [54, 55]
   - parental attitudes towards substances [28, 50].

These risk factors can work in combination and have direct and indirect effects upon an adolescent's substance use. For example, Sheridan's study of the histories of incarcerated adult substance abusers indicated significant direct and indirect relationships among parental substance abuse, family dynamics, and exposure to both child and adult maltreatment:

> Although parental substance abuse was found to be directly related to child maltreatment, results suggest it may also be indirectly associated through its relationship with family-of-origin competence. Specifically, the negative impact of parental substance abuse may best be understood as having adverse consequences on family dynamics; which in turn, increases the likelihood of exposure to child abuse and neglect. [56] (p. 526)

Further, these variables were found to be significantly associated with the respondents' own substance abuse. These results were seen to indicate that these patterns continue into successive generations. Consistent with these results is the finding that chemical dependency is present in at least half of the families who come to the attention of child welfare authorities for child abuse and neglect. [57]

Being in a single-parent household has often been purported as a major risk factor for substance abuse. [58] However, statistical adjustments for social and contextual factors such as

family relations and SES have been made, family structure has been found to have little or no direct effect on substance abuse. [14, 59-61]

As is the case with most risk factors discussed here, their reverse can be protective from substance misuse. That is, family attachment can serve as a deterrent to substance use. [49] Resnick and colleagues found that caring and connectedness with the family in the lives of adolescents is highly protective against acting out behaviours, including polysubstance use. [60]

Parental influences have been found to be strongest and most direct early in the life of children, when experimentation with substance use is an issue. However, when the child becomes an adolescent, the family's role is indirect by influencing the choice of peers. [62] Furthermore, once adolescents become involved in moderate substance use, parental attempts at control tend to be ineffective in preventing more serious substance use. [63]

How does the family influence substance use? As mentioned above, family influences are complex and vary with the age of the child. For example, from the perspective of attachment theory, Brennan has argued that family relationships are important to the development of social competence in adolescence and that social competence is crucial for resilience against psychopathology. [64]

It is well recognised that the family needs to be considered in adolescent treatment. [65-67] If family issues are a contributing factor to the adolescent's substance problem, adolescents who return to the same home environment are likely to relapse. Conversely, the family can be a protective factor and can support the program and the adolescent in achieving treatment goals. The attitudes and behaviours of the family and/or of the adolescent could need to change for the family to be a protective, rather than a risk factor. Research has demonstrated that family involvement in treatment has a positive impact on treatment outcome. [68] Family involvement can be difficult to achieve, and is even less likely if it is not actively recruited. Approaches employing active engagement of the family have been trialled with positive effect [69, 70], although they might need some modification with different cultural groups [71]

In cases where family involvement is not possible, it still important to deal with family issues with adolescent clients. [72] In some cases separation from, rather than involvement with, the family could be indicated. As Howard has stated:

> Family issues should not be ignored as many young people can return home if both they and the family learn better adaptive and coping skills. Others need to separate adequately and be able to leave the family behind rather than explode out of it, carrying the residue of such conflicts with them. [73] (p. 110)

Finally, the parents are not the only significant family members. Siblings, uncles, aunts, cousins, grandparents, or significant others, might have a role in the aetiology and/or continuation of an adolescents substance abuse. [74]

In summary, the family experience is an important factor in the aetiology and treatment of substance abuse and addressing family issues and family involvement are important components of treatment.

2.6 Childhood physical and sexual assault

There is substantial evidence that children who have been abused or neglected are at a high risk of detrimental outcomes such as illicit substance use and delinquent/criminal behaviour [75] self-destructive and suicidal behaviour [76, 77]. The causal mechanism is not clear. Dembo and colleagues have proposed a model, based upon a developmental damage view of the effects of child physical and sexual maltreatment. [51] Such children are seen to suffer from an abnormally poor self-image that negatively affects subsequent socialisation and to feel that the world is a generally unsafe place. Substances are used to deal directly with the emotional pain of the abuse or with the subsequent self-derogation (note that children who have suffered physical abuse often feel that they deserved the punishment).

Janikowski and Glover have argued that recovering substance abusers who do not receive therapy for their experiences of childhood abuse are highly likely to relapse because the shame, guilt, and anger that might have been being alleviated by the substance use, will continue to exist. [78] Treatment issues are further discussed in a later section of this report about

survivors of trauma.

2.7 Ethnicity

Studies of ethnicity and substance use are fraught with problems. For example, ethnicity can be defined in numerous ways such as language other than English spoken at home, religion, country of birth, country of parents' birth, and national heritage. Second, national borders change with time and nations can include a variety of cultures. Third, with the large number of ethnic groups in Australia it is difficult to obtain reliable data for each group. Fourth, the influence of Australian culture on any particular individual from any ethnic group can vary according to factors such as length of residence in Australia and commitment of the individual and his/her family to adopting the culture of the new country.

More research into substance use by ethnic groups has been conducted in America [22, 79] than in Australia [80], although there has been some significant research into substance use by indigenous Australians. [81-83] Overall, ethnicity tends not to be a useful indicator of problematic substance use among adolescents in Australia. If anything, firmer family controls have been found to reduce the prevalence of substance use among some Australian ethnic communities. On the other hand, indigenous Australian adolescents do appear to be more likely to have substance-use problems than non-indigenous Australian adolescents. While a higher percentage of indigenous Australians abstain from substance use than non-indigenous Australians, those who do drink are more likely to drink excessively. [81] Furthermore, volatile substance abuse (particularly-petrol sniffing) among indigenous Australian adolescents has been a major issue of concern in many indigenous Australian communities. [84]

In summary, ethnicity is not generally a useful indicator of risk for adolescent substance abuse.

2.8 Socio-economic status

Attributing substance abuse to environmental influences such as socio-economic status has an intuitive appeal, as discussed by Howard and Webster. [73, 85] However, there appears to be some discrepancy in the literature about a relationship between SES and substance abuse. [22] Hawkins and colleagues concluded on the basis of their review of the aetiology of substance abuse that there is no such relationship [1], whereas Dryfoos's review suggests that SES (for example, living in a deprived neighbourhood) is an important risk factor for problem behaviours, including substance abuse. [14] Perhaps, as discussed by Johnstone, this discrepancy can be explained by the fact that SES has an *indirect* effect on substance abuse:

> Taken together, the recent literature seems to suggest that class effects on adolescent drinking may be principally indirect or conditional on other characteristics of sociodemographic status or drinking outcome. Zucker (1979) noted that parents' socioeconomic status structures peer associations, family dynamics, and other significant influences on adolescent drinking. Biddle et al. (1980) reported that middle class adolescents tend to adhere to peer group norms about drinking, while working class youth place greater emphasis on parents' norms. Relatively high personal income among adolescents has also been reported to promote increased alcohol use (Maddahian et al. 1986; Bachman et al. 1988). [22] (p. 180)

Support for this notion comes from Fergusson and colleagues' multivariate analyses of data from their longitudinal study of 953 children from birth to age 16. Family social position (FSP) was indicated by a composite measure of parental education levels, family occupational status, parental age, ethnicity, and family structure. Their analyses identified that FSP was not directly associated with alcohol abuse at age 16, but that it was significantly associated with alcohol consumption at age 14 and with peer affiliations at age 15, both of which were significantly associated with alcohol abuse at age 16. The authors concluded that FSP influenced early drinking behaviour and peer affiliations that in turn, determined later alcohol abuse at age 16.

Smart, Adlaf and Walsh hypothesised that previous failures to find a link between SES and substance abuse were due to adolescents often not knowing the SES characteristics of their families. [86] These researchers used the sadolescents postcode as an indicator of SES as most adolescents know their postcode and the SES characteristics of each postcode area were able to be ascertained. Specific identifiers of low SES areas were low cost substandard housing,

social problems, racial problems, and delinquency. The authors found the highest substance use and problems existed in the areas with the lowest SES characteristics and concluded that SES does contribute to substance abuse.

In summary, it appears that SES does influence substance-use behaviours among adolescents.

2.9 Macro-environmental factors

Macro-environmental factors that influence substance misuse include advertising, legislation and law enforcement (deterrence strategies), taxation, and availability of substances. There is considerable debate in Australia and overseas about the issue of legal controls for specific substances such as alcohol [87, 88] and cannabis [89, 90] and other substances [91, 92] and alcohol advertising and labelling [93]. A detailed review of the literature on these control strategies is beyond the scope of this report. Suffice it to say these have an impact upon substance use, directly upon individuals, as well as indirectly, via their impact on social values.

Another aspect of the macro-environment is 'society'. Richard Eckersley has written extensively on the predicament of adolescents in Australia. [94] Eckersley's review of the literature has painted a depressing picture of social and psychological problems among adolescents, caused by rapid changes in society:

> . . .increases in family conflict and breakdown, increasing poverty, high youth unemployment, soaring youth homelessness and growing education pressures. Underlying these developments are social, economic and technological changes that may, in themselves, be imposing a growing psychological stress on children and young adults - a stress that finds bleak expression in the fear and pessimism with which many of them regard the future. . . growing numbers of young people feel there is no escape; they fell powerless and hopeless. . . Those who fail, or feel they never had a chance, are giving up, and resorting to crime, drug-induced oblivion, and suicide. (p. 1)

Hence, current society appears to be creating a tendency for adolescents to detach from society, perhaps to give up. Services cannot change society overnight, but it could be important to try to instill a sense of hope in adolescent clients who have given up, either on their own ability to succeed in society, or on the need to try, or who feel that society has given up on them.

2.10 Locus of control

Locus of control has been purported to be associated with substance abuse and dependence. However, the evidence has been inconsistent, indicating that it could work differently for different people, different substances, and in different contexts. [95]

2.11 Mental health

Numerous studies have investigated the influence of psychological distress on adolescent substance use. [96] Despite numerous claims and indications that psychological distress, including low self-esteem and depression, contribute to the initiation and maintenance of substance use, these variables have tended <u>not</u> to be reliable or strong predictors of substance use. [97, 98]

While Hawkins and colleagues have found no evidence for higher rates of psychopathology among substance users compared with non-users, except where the users are very young [1], psychopathology is often encountered by services dealing with adolescents with substance-use problems. [99] Various relationships have been proposed between substance abuse and psychiatric disorders. [100] For example, substance use could induce psychiatric pathology in vulnerable individuals or substance use can begin as a form of self-medication, particularly among schizophrenics . [101, 102] Friedman and colleagues have reported that each exacerbates the other in an additive manner. [103]

In summary, while there is a tendency for adolescents who have problems relating to substance abuse or substance dependence to have higher rates of emotional or psychiatric problems than other adolescents, research does not clearly identify mental health problems as a significant risk factor for substance abuse.

2.12 Knowledge

Substance use and misuse have been attributed to a lack of knowledge of the risks associated with use. Supporting evidence for such an assumption comes from Kandel's prospective study of substance use by adolescents, that found that adolescents are more likely to start using hard liquor, cannabis, or other illicit substances, if they believe that casual use of the specific substances is not harmful. [104]

Consequently, early efforts to change or prevent substance-using behaviour relied upon the assumption that increased knowledge about the consequences of substance use would be an effective deterrent (rational response) and/or fear arousal messages would scare individuals from using substances (emotional response). [2] Ross and Rosser have reviewed three major health education models [105]:

a) Bloom's taxonomy of educational objectives asserts that: education must effect change in three domains to be effective: attitudes and emotions towards a subject, information about a subject and the ability to adequately perform the desired behaviours. Appropriate changes in attitudes and values are required before information is internalised and behaviour change occurs. [106]

b) In Janz and Becker's Health Belief Model: the importance of an individual's perceptions of vulnerability to a health problem, the severity of that problem, the potential efficacy of changing behaviour to prevent the problem and the costs and benefits of making such changes is emphasised. These perceptions are important, over and above simple knowledge about a health problem, for motivating changes in behaviour to avoid the problem. [107]

c) Ajzen and Fishbein's Theory of Reasoned Action: the importance of an individual's perceptions of the social norms, pressures and supports on a decision to behave in a particular way is emphasised. [108]

The consistent feature of each of these models is that knowledge alone is not sufficient to effect behaviour change without modification of beliefs and attitudes.

Knowledge-based interventions have typically had either no effect on substance use [109] or increased substance use. [110, 111] It is likely that the failure of most education programs has been a result of a reliance upon the simplistic assumption that increasing knowledge changes behaviour, rather than dealing with the multiple factors that contribute to substance-use behaviours.

2.13 Stress and coping/support mechanism

According to strain theory, various forms of deviance, including substance abuse, are mechanisms that help people cope with the stresses of life. [112] While there is some evidence to suggest that stress levels can be positively associated with substance abuse among adolescents, [113] the results of a study on the predictive ability of the strain theory produced inconclusive results. [114] Perhaps it is not just the existence of stressors that contribute to substance abuse, but the person's ability to cope with those stressors. This notion is supported by research that suggests that the intensity of stress experienced by a person is not just a function of the stressful event or condition, it is mediated by a person's coping skills and social supports. [112]:

a) **Coping skills** include several different cognitive and behavioural strategies that can be called on to deal with a problem. [115] **Cognitive** strategies include self-assurance, comparing one-self to others who are doing worse than one-self, reinterpreting the problem in a more positive manner, and exercising self-control by thinking about the negative consequences of an undesirable behaviour. **Behavioural** coping strategies include problem-solving activities, withdrawal, assertiveness, seeking support, and relaxation.

b) **Social support:** Hurrelmann has commented that health is only possible when a person can establish constructive social relationships. [116] Brennan discusses how relationships

buffer adolescents against social stresses such as those associated with socio-economic disadvantage, family problems and the physiological stress associated with puberty. [64] To be effective mediators of stress, relationships with social support need to include trust and intimacy. [112]

Coping skills and social support are linked in that the development of interpersonal / social skills can assist in the development of supportive social supports.

Shiffman and Wills have distinguished between coping with stressful life events in general (stress-coping) and coping with relapse risk situations (temptation-coping). [117] Marlatt and Gordon have recommended that specific coping skills are required to deal with temptation-coping: that is, relapse-prevention skills. [118]

c) **Relapse-prevention skills-training** incorporates identifying high risk situations for a lapse, and generating ideas for avoiding or for dealing with those situations. Specific skills used in relapse-prevention include the coping skills identified above, as well as specific skills in coping with urges/cravings

Rhodes and Jason have argued that the extent to which adolescents can have access to and use effective supports and coping skills influences their likelihood of using substances as a means of coping with stress. [119] Accordingly, increasing adolescents' access to and use of social supports and coping skills can assist them to cope with stress without substances. [120] This is supported by numerous research studies. [121] For example, a longitudinal study indicated that pre-school children who were less resilient, less socially competent, and more rebellious, were more likely to be substance abusers at age 14 than the other children. [122] Richter and colleagues, found that the number of non-substance-using supports and satisfaction with social support were positively associated with maintenance of positive treatment outcomes among adolescent substance abusers [123]

It is also worth noting that some adolescent clients' experiences could make them unwilling to embrace supportive relationships. This can be due to a number of concurrent factors, such as low self-esteem (feeling that they have nothing to offer a relationship), distrust of others, or a lack of awareness of the benefits of supportive relationships. [124] Keogh has argued that programs need to instill a sense of belief in the value of relationships:

> . . . as we grow, if our experiences are 'good enough' we develop emotional capacities and related skills that enable us to meet the challenges of life. . . Part of this process, involves the development of a belief in constructive, reparative, and loving capacities which have had the opportunity to develop in relationships with significant others. . . This need for relationship, and the feeling that one has something good, generative and restorative in oneself to bring to a relationship, are crucial to our understanding of what will ultimately influence change. This is especially true of those with narcissistic and psychopathic personalities, where it is strongly denied because it threatens. . . Ultimately then, we need to adopt a multisystemic means to help clients achieve a reparative, responsible, constructive and loving outcome. [124] (pp. 149-58)

In summary, cognitive and behavioural coping skills and access to quality supports have been found to be protective from adolescent substance abuse. Consequently, teaching coping skills (general coping skills as well as relapse-prevention skills) and facilitating access to quality supports can assist adolescents to manage their substance use. Additionally, some support to deal with adolescents' emotional barriers to social relationships could be needed.

2.14 Peer factors

Association with peers who use substances is one of the strongest predictors of adolescent substance use [23, 49, 125-128], particularly when that substance use is cannabis or polysubstance use. [129] These findings are consistent with differential association theory [114, 130] and social learning theory [131, 132]. Specific predictors include:

- substance use by peers
- substance-related attitudes of peers
- perceived use of substances by others
- perceived support for substance use by peers
- peer preference.

The influence of peers is not simple. Firstly, substance-abusing peers do not tend to

suddenly appear in a child's life and 'pressure' that child to abuse substances. [133] It is more usually the case that children who are prone to problem behaviour tend to affiliate with like-minded peers and that affiliation with these peers tends to encourage and reinforce problem behaviours, including substance abuse. [134, 135] Snyder and Huntley discuss how the relationships of children with coercive interaction styles (for example,. children who tend to whine or throw tantrums) deteriorate with parents, then teachers and peers so that they do not learn social and cognitive skills and end up associating with antisocial peers with compatible attitudes and behaviours. [136] Hence, affiliation with problem adolescents tends to be preceded by rejection by pro-social peers due to poor social skills. [43]

There is substantial evidence for a lack of social skills among substance abusers. [137] For example, a study of social skills and drinking behaviour among adolescents in Queensland found that:

> 11% of drinkers and 50% of problem drinkers were in the incompetent range of social skills performance while no non-drinkers scored in this range. None of the problem drinkers scored in the highly competent range of performance whereas 22% of drinkers and 40% of non-drinkers did. [138] (p. 207)

These findings suggest the need for social-skills training for adolescents in drug treatment, particularly if attempts are made to encourage adolescent clients to make new friends with peers whose lifestyles do not focus on substance use and other problem behaviours.

Second, peers have different effects at different stages of substance use. Following a review of the literature and some original research, Dielman and colleagues concluded that peer substance-use behaviour is the primary predictor of adolescent alcohol *use*; peer norms, however, are more important in the prediction of adolescent alcohol *misuse*. [139]

Third, the influence of peers tends to increase as the influence of family starts to decrease. Research indicates that involvement with antisocial peers can occur before the age of ten and is highly predictive of later involvement with deviant peers. [140] Nevertheless, strong bonds with family and school, can attenuate peer influences. [141] For example, parental norms and behaviour could influence adolescents' attitudes and consequent attraction to a particular peer group. [139] Hoffmann warns, however, that the influences of parents and peers are complex so simplistic cause-effect relationships can be misleading. [129]

In summary, peers have a substantial impact on substance-use behaviours and this impact is influenced by other factors, particularly those factors that relate to the choice of peer groups such as family influences and social skills. Social skills-training can assist adolescents to make new friends with prosocial peers.

2.15 School factors

Low commitment to education has been associated with substance misuse and delinquent behaviour. [25, 45, 142] Substance users are more likely than non-substance users to be absent from school, [47, 125] skip classes [29, 47] and perform poorly, [29] drop out of school early, dislike school, perceive course-work as irrelevant, spend less time on homework [29] and be suspended from school [125].

The timing of academic problems appears to be important for its predictive value. Spivack found that academic failure in Grade 1 did not predict later delinquency, but academic failure in Grade 5 did predict delinquency. [143] Spivack also found that antisocial and maladaptive coping behaviours in Grade 1 contributed to, and were exacerbated by, the academic failure in Grade 5.

Academic problems might be a contributor or a consequence of substance abuse. The implication for adolescent clients is that a poor academic record could be a barrier to training and employment that might then compromise reintegration into society. Services should either assess and address educational and vocational issues or refer adolescent clients to services that can do this.

2.16 Antisocial behaviour and delinquency

Antisocial behaviour, delinquency, and conduct disorder, in early childhood have been

consistently associated with substance misuse (rather than occasional or experimental use). 'Antisocial behaviour' is behaviour that is unsociable or contrary to the interests of society. Unsociable behaviour is not necessarily delinquent behaviour. 'Delinquency' refers to offences or misdeeds. As stated by Dryfoos, delinquency:

> '. . . covers a wide range of behaviours from socially unacceptable acts performed in early childhood that parents describe as 'naughty' and psychologists call 'acting out' to violent and destructive illegal behaviors'. [14] (p. 29)

'Conduct disorder' is a diagnosis applicable when three or more designated delinquent behaviours co-occur in a six-month-period before age 15 and the child is considered unmanageable or out of control. The designated behaviours include truancy, stealing, cheating, running away, lighting fires, cruelty to animal or persons, 'unusually early' sexual intercourse, substance abuse, breaking and entering, and excessive fighting. [144] Thus, there is overlap between antisocial behaviour, delinquency and conduct disorder, but the terms are not interchangeable.

Significant associations have been found for:

- male aggressiveness in the first grade of school, especially when coupled with shyness, and the frequency of substance use ten years later [7]
- aggression and acting out with alcohol abuse and heavy cannabis use [63]
- childhood rebelliousness and daily cannabis use [29]
- delinquency and
  - subsequent substance use [27, 145]
  - daily cannabis use [29]
  - regular substance use [125]
  - substance problems in adulthood [146]
- the number of symptoms of conduct disorder and the number of substance-dependence diagnoses [147].

While antisocial behaviour generally precedes substance abuse there is substantial evidence for viewing delinquency and substance abuse as parts of a problem-behaviour syndrome. [14, 15] However, Dryfoos cautions that 'while most delinquent adolescents may be substance abusers, not all substance abusers are delinquents.' (p. 246)

What causes antisocial behaviour? A review plus original research by Patterson and colleagues have emphasised the notion of a stage model, based upon social learning theory, where each stage strongly predicts moving to the next stage. [46] In stage one it is initiated by a genetic predisposition to use aversive behaviours to shape and manipulate the social environment, to avoid responsibility, and to maximise immediate gratification. The child with an antisocial trait, if exposed to ineffective parenting, is unlikely to develop positive personal and social skills, and is likely to experience parental rejection, low self-esteem, and depression. Environmental stress such social disadvantage and parental antisocial behaviour can exacerbate the effects of poor parenting skills. In stage two the child is likely to do poorly academically, be rejected by peers, and to develop antisocial attitudes. In stage three the child socialises with other antisocial children who support, or at least accept, antisocial behaviour, and is more likely to engage in substance abuse and delinquency. Throughout adolescence and into adulthood, the antisocial person is prone to problems with substance abuse, interpersonal relationships, employment, and mental health. Shaw and Bell's review of developmental theories of parental contributors to antisocial behaviour supports and extends Patterson and colleagues' model. [148]

There is some inconsistency in views about the life-course of antisocial behaviour. Hawkins and colleagues have noted that, while nearly all serious antisocial problems (including substance misuse) are preceded by childhood antisocial behaviour, less than half of the children who exhibit childhood antisocial behaviour develop more serious problems in later life. [45] Most other reviews, on the other hand, have described antisocial behaviour as relatively stable over time. [46, 149]. Therefore, without a specific intervention, 'it is unlikely that they will simply grow out of it.' [149] (p. 187)

In summary, early antisocial behaviour and delinquency have been associated with later,

problematic substance use. These behaviours tend to co-occur during adolescence as part of a problem-behaviour syndrome, suggesting that they have common antecedents, rather than that the antisocial behaviour/delinquency 'causes' substance abuse. [14] The stages model of antisocial behaviour presented above suggests the importance of teaching adolescents intra-personal skills (for example, mood management and impulse control) and social skills, as well as teaching parents effective parenting skills (for example, parental monitoring in combination with appropriate contingencies for deviant and prosocial behaviours).

2.17 Age of first use

Early initiation into substance use has been identified with problem substance use [22, 29, 150, 151] and alcohol abuse at age 16 [23], as well as with antisocial behaviour [152]. The reason for the effect of age of first use on problem use is not clear and various explanations have been proposed. [22] For example, Yamaguchi has demonstrated that postponement of the age of onset of alcohol use shortens the period of high risk for initiating cannabis use. [150] That is, as demonstrated by Kandel and colleagues, substance users tend to follow a pattern of use, begining with legal substances followed by illegal substance use and adolescents who have not begun using illegal substances by the late teens or early twenties are unlikely to ever do so. [153] Age of first use has more implications for prevention (for example, delaying the onset of use) than for treatment interventions.

2.18 Adolescence

Adolescent years is a high risk period for substance abuse for numerous reasons. [154] For example, growing up is stressful: there is stress associated with puberty, the development of a new identity, and separation from parents (to name a few). It is not surprising, then, that one in four adolescents undergo serious psychological jeopardy in that era of life. [155] Adolescence is a time of experimentation and socialisation. However, adolescents are just developing the decision-making skills that require formal operational thought such as envisioning different options and weighing-up the alternatives. That is, the ability to make decisions about risky behaviours has not yet developed. Given that some adolescent substance abusers do grow up, they could mature out of their substance abuse. However, not all of them will mature successfully and simply waiting to see who grows out of it is shirking our societal responsibility to those who are having difficulty in their maturation process.

2.19 Labelling

In a detailed and complex study of the factors that predicted an escalation of substance use under various circumstances, Kaplan and Johnson found that the strongest predictor of increased substance use was the effects of specific labelling: substance use increased as a result of getting into trouble because of initial substance use [13] According to labelling theory:

> . . . deviant behaviour or social roles based upon it, which becomes a means of defence, attack, or adaptation to the overt and covert problems created by the societal reaction to primary deviation. [156] (p. 17)

Kaplan and colleagues explained that negative social sanctions (labelling) lead to an escalation of substance use via three paths: [157]

a) by perceiving the label of 'substance user' as a positive thing, substance users can have a more positive self-evaluation and greater self-acceptance
b) having been alienated by society because of being a substance user, the substance user loses motivation to conform to that society
c) having been alienated by society because of being a substance user, the substance user has less opportunity to socialise with non-substance users; this leads to increased involvement with substance-using groups, hence greater opportunity and encouragement to use substances.

Being labelled as a 'junky' or an 'addict' is a powerful phenomenon that can give adolescents the identity that they have been searching for, as per their developmental task. By serving the purpose of supplying a ready-made identity and social group, such labels can be a barrier to

change. For these reasons it is preferable that services not provide or perpetuate labelling adolescents as substance 'abusers or 'addicts'. Even the name of a service can be important. For example, it might be preferable to call a specialist service for adolescent substance abusers a 'personal development program' rather than a 'drug treatment program'.

2.20 Substance variables

Whether substances are used at all, how much, and how often, they are used, and the nature and extent of problems relating to use, are also dependent upon the substance itself. Substances differ in their potential for abuse as a result of their individual pharmacological properties, as well as the various social and psychological values and expectations of the substances. [158] Treatment strategies need to be planned with consideration for the particular substances used by the adolescent client as issues, such as reasons for use and craving, are likely to vary according to the pattern of substance use.

2.21 Prelude to a summary: the problem-behaviour syndrome

From the above review of the aetiology of adolescent substance abuse, it is clear that substance abuse is one of the risk behaviours identified by Jessor and colleagues as part of a problem-behaviour syndrome. [15, 159] That is, a pattern of risk behaviours that compromises the psychosocial aspects of successful adolescent development, including substance abuse, withdrawal from school involvement, unprotected sexual intercourse, and delinquency. Other studies and literature reviews have supported the concept of a problem-behaviour syndrome [14]

The constellation of problem behaviours might be not simply the result of their having common causes. Jessor discusses how the social ecology of adolescent life could provide socially organised opportunities to learn risk behaviours simultaneously and normative expectations to engage in more than one risk behaviour. [15]

Failure to see substance abuse as part of a larger pattern of behaviour can be a barrier to effective interventions, particularly as each risk behaviour could be contributing to another risk behaviour. For example, the review above has identified how delinquency and substance abuse can exacerbate each other in a spiralling fashion. The good news, however, is that, given their shared aetiologies, the interventions that can change an adolescent's risk status for one problem behaviour are likely to be effective in changing the other risk behaviours. On the other hand, we need to be careful to not over-generalise: adolescents who engage in one problem behaviour do not always engage in other problem behaviours; each adolescent client needs to be considered as an individual. [72]

2.22 Summary and theoretical integration for planning

Adolescents do not simply abuse substances because they are sick or morally weak. [160] A range of individual, family, social, environmental and other risk factors have been identified for substance misuse. Clearly, each of these risk factors are related and there is not a simple causal chain. Various models and theories have been proposed to predict substance use and misuse on the basis of risk factors. [161-163] No models are able to accurately predict or comprehensively describe substance abuse by adolescents. Suffice it to say that:

a) substance use is determined by numerous, inter-related risk factors, as well as protective factors [119, 158]
b) the individual, the environment, and the substances themselves, need to be considered when considering the aetiology of substance use [164, 165] and
c) substance abuse is often part of a problem-behaviour syndrome that includes delinquency, substance abuse, adolescent pregnancy, school failure, and dropping out [14, 159, 166].

Consequently, interventions that try to deal with single-risk factors or risk behaviours are highly unlikely to be effective. Also, with the emphasis on *risk* factors, many researchers and planners fail to consider *protective* factors. That is, for each risk factor, its reverse could be protective. For

example, peer influences could act as a restraint on substance misuse, [167]; commitment to conventional social groups, such as the family, religion, and school, can act as a restraining force against participation in deviant activities [151]. When considering a treatment plan for an individual, case planners need to consider what factors have supported *non*-problematic use, as well as those factors that have contributed to problematic use.

It is important to note the limitations of reviews of the aetiology of substance abuse. Firstly, there is still much that is not known or not clear. The history of substance abuse research and interventions has been one of much supposition, inconsistency, and error. [3, 168] Even models that have received considerable support over the years do not account for all of the variance. That is, we are not yet able to predict accurately who will become a substance abuser, we can only be alert to the risk factors currently identified.

Second, the above review has relied upon quantitative research to test for associations between suspected risk factors and behaviours. However, qualitative research methods, such as ethnography, have played a valuable role in describing and explaining substance abuse and providing recommendations for practice. For example, Moore's ethnographic research with skinheads [169] and psychostimulant users [170] has led to useful recommendations and insights into subgroups, particularly situational influences on drinking and substance use, that would be difficult to obtain by other methods. [171] Given these limitations, assessments of the factors that contribute to problem behaviours for each individual client or client group need to be able to identify factors that are not listed in literature reviews such as this one. That is, we need to look for risk factors and protective factors with an open mind and ask a lot of questions to ascertain the pertinent factors for the client or group at hand.

Whether developing a case-plan for a single client or planning an intervention for a group, we need to consider all of the factors that contribute to the problem, all of the stakeholders, and significant others, and of all of the resources at hand to assist with dealing with the problem.

There are various texts to assist workers in developing plans. For example, one strategy for planning interventions for substance-abusing adolescents has been developed by the Programme on Substance Abuse from the World Health Organisation. [172] This strategy uses the 'Modified Social Stress Model', (based upon Rhodes and Jason's social stress model [119]) to help workers to consider all of the risk factors and protective factors when planning an intervention (Figure 2.1).

(risk factors)
(Dis)stress + normalisation + experience
Attachments + skills + resources
(protective factors)

Figure 2.1: Modified Social Stress Model

Stress includes:

- major life events such as child sexual assault
- long-term problems such as poverty or lack of recreational opportunities
- everyday problems such as dealing with a violent environment
- major life changes such as moving house and
- adolescent developmental changes.

Normalisation of a substance is affected by:

- law enforcement
- availability
- price

- advertising
- media presentation
- culture
- peer norms.

Experience of substance use is affected by variables associated with:

- the user (for example, the user's expectations of effect)
- the substance (for example, type of substance or how pure it is)
- the setting (for example, the mood of the occasion).

Attachments can be positive or negative, and can be with other adolescents, the family, workers, and so on.

Skills include:

- competencies that help people succeed in life (for example, leadership)
- coping strategies such as skills in assertiveness, problem solving and relaxation.

Resources are anything that can help towards physical and emotional needs being met and can be internal (for example, intelligence) or external (for example, family, adolescent workers)

Each of these factors have been addressed in the above review. The essence of the model is that, when planning interventions, we are trying to reduce the risk factors and build up the protective factors. The social stress model is one way of putting together the risk factors and protective factors in a way that assists planning interventions.

2.23 Self-reported reasons for use

If a researcher was asked why adolescents use and misuse substances, they can cite the aetiological risk factors discussed above, most of which denote something wrong with individuals and/or their environment as being causes of substance-use behaviours. However, if adolescent substance users are asked why they use substances, a quite different perspective on the reasons for adolescent substance use and misuse is given.

Reilly and Homel asked a sample of 1,071 adolescents aged 15 to 18 in Sydney who had used an illicit substance (other than, or as well as, cannabis) why they took substances. [173] About half of the respondents said they use substances because they enjoy the high (31%) or for social fun (16%). A minority of the sample said that they use substances to cope with negative feelings (7%), to alleviate boredom (11%), or as a result of peer pressure (8%). Analyses indicated that a relationship between the type of substances the respondents used and their reasons for use:

- respondents who had used amphetamines, cocaine, hallucinogens and/or designer drugs in the previous month tended to use substances for social or psychological enjoyment
- respondents who had used tranquillisers, barbiturates, opioids and/or inhalants tended to use substances to cope with negative feelings, boredom, or peer pressure.

This study highlighted that adolescent illicit substance users have functional (often hedonistic) reasons for illicit substance use and that the reasons for use vary according to the type of substance used. However, this study did not ask respondents to distinguish a) why substances were first used and why they continued to be used and b) the reasons for use of each specific illicit substance that they used.

A subsequent study by Spooner (previously Reilly) and colleagues addressed these issues by asking respondents, for each illicit substance used, why they first used it and why they continued to use it. [174] This study surveyed 581 youths aged 16 to 21 in Sydney who had used an illicit substance (other than, or as well as, cannabis). The main reason for initial use of all substance types was to try something new, or for the experience. This reason was given for up to 72% of the time for all substance types, except sedatives (38%). The other main reason for first trying sedatives was boredom (10%). Other reasons for trying other substances rarely accounted for more than 10% of the responses. Those that did were the desire to use something stronger (heroin, 10%) and peer group pressure (cannabis, 13%).

As to why respondents continued to use specific illicit substances, about half of the users of all substances, except inhalants and sedatives, reportedly used those substances because they 'liked them'. On average, 29% of the users of each substance reported that they used that substance to get high. This response was most common among sedative users (18%) and heroin users (22%).

Other reported reasons for use were more substance-specific than those described above. One-third of heroin users said that they used heroin because they were 'addicted'. This reason was rarely given for the use of any other substance. Sedatives (20%) and cannabis (10%) were also used to relax or sleep, while amphetamines were used to keep awake (11%). No other single reason accounted for more than 10% of the responses. In summary, Spooner and colleagues' research indicates that most young illicit substance users use substances for fun, a minority use to cope or because of a dependency. Those who report the latter reasons are more likely to be using heroin and/or sedatives than those who use substances for fun.

Bungey and Faulkner investigated the reasons for first use and continued use of 'drugs'[10] among young people aged 12 to 25[11] who used inner-city health and welfare agencies. [175] Of the 230 youths who reported taking substances at some stage in their lives, the two main reasons for first using substances were curiosity (38%) and peer pressure (31%). The other two most prevalent responses were for a good time (13%) and to forget problems (9%). The 209 current substance users were asked why they currently took substances. The most prevalent reasons were to get high (37%) and to escape reality (20%), followed by relaxation (12%), something to do (11%), and peer pressure (8%).

Zibert, Hando and Howard asked adolescents in juvenile detention centres why they used each of a list of substances. [176] The most frequently reported reasons for the use of all substances were to feel good, to party/have fun, curiosity, and boredom. The exception to this trend was inhalants other than amyl nitrate. Inhalants tended to be used because of boredom, rather than to party and have fun. Other findings were:

- consistent with the above studies, sedatives and opioids were less likely than other substances to be used to party and have fun
- the substances most likely to be used to cope with worries were sedatives, opioids, alcohol, and cannabis
- cannabis was the substance most likely to be used to feel part of the group, to cope with worries and because it is available, and second-most likely to be used because of boredom.

In summary, each of the above studies, found that the major reasons given for illicit substance use have been to party and to have fun. This is consistent with studies that have associated sensation-seeking with substance use. [177] However, the major reasons given for illicit drug use by users of sedatives, opioids, inhalants, and to some extent, cannabis have tended to be boredom and to deal with worries. Such a dichotomy has also been found outside Australia. [42] The use of different substances for different reasons reflects the differential effects of each substance. [178, 179]

In contrast to the above studies, the most frequently given reason for substance use given by clients at Dunsmore House, a residential drug-treatment service for adolescents, was 'to forget'. This response was given by about 30% of clients, whether their main substance of abuse was alcohol, heroin, cannabis, or amphetamines. Substance use for 'fun' was reported by less than 10% of the sample, and by only 1% of heroin users. It appears that reasons for use among adolescents substance abusers differ from the reasons for substance use given by other

[10] It is not clear what 'drugs' meant. Presumably 'drugs' meant illicit substances.

[11] Over 60% of the respondents were aged 15 to 19.

adolescents. This difference is consistent with an association between reasons for use and substance-problem severity, as identified by McKay and Buka. [72]

These self-reported reasons highlight an issue that is often overlooked by researchers, planners, and service providers: that substances are used for a reason and that there are usually benefits to the user for substance use. Moore and Saunders have written about the benefits of substance use in the context of prevention program planning, however, their discussion has relevance for treatment programs as well. [180] They have argued that substance users are not pathological, that substance use is functional (even though it might be dangerous), has immediate benefits, and is part of the social construction of meaning for many individuals. Similarly, Brown noted that:

> Those young people whose illicit drug use reaches the attention of the welfare or correctional system, often have experienced disrupted family backgrounds and are finding life intensely disagreeable in the present. Their use of illicit and other drugs as a source of relief holds compelling and - in the light of the adversities which many are obliged to face - quite understandable attractions for them. [181] (p.69)

In summary, the reasons for use vary among adolescents and across time within adolescents. For example, substance use might begin as a result of curiosity or peer pressure, then continue for social/recreational purposes. For some, use might then continue or increase when it is used to help cope with life, or specific problems. Reasons for use can even vary day by day, or depend on the situation. For example, some use could be social/recreational at one time, then to help deal with problems at another time. Different substances and settings might be involved with these different purposes. Furthermore, studies of reasons for use tend to get different patterns of responses, depending upon who make up the sample. Studies of adolescents who are predominantly not having problems about their substance use (such as the studies by Reilly/Spooner) identify that most adolescents report that they use substances because it is fun. However, as the samples contain more problematic substance users (such as the sample from Dunsmore House), the reasons for use tend to shift away from 'fun', towards 'to forget'. Similarly, reported reasons for use can also vary between cultures. [182]

In conclusion, the reasons for substance use are an important factor for service provision as these can vary as a result of many factors such as the point of time in a substance-use career, the specific situation, and culture. Some substance use might be functional <u>and</u> not problematic. However, where substance use is interfering with adolescents dealing with their problems or their life in general, teaching life skills and providing support to deal with those problems can be a useful and effective intervention.

2.24 References

1. Hawkins, J., Catalano, R. & Miller, J. (1992) Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: implications for substance abuse prevention, *Psychological Bulletin*, 112, pp. 64-105.
2. Hawkins, J. D., Lishner, D. M., Jenson, J. M. & Catalano, R. F. (1987) Delinquents and drugs: what the evidence suggests about prevention and treatment programming, in: Brown, B. & Mills, A. (Eds.) *Youth at high risk for substance abuse*, pp. 81-131 (Rockville, MD, US Department of Health and Human Services).
3. Easthope, G. (1993) Perceptions of the causes of drug use in a series of articles in The International Journal of the Addictions, *International Journal of the Addictions*, 28, pp. 559-69.
4. Rutter, M. (1987) Psychosocial resilience and protective mechanisms, *American Journal of Orthopsychiatry*, 57, pp. 316-31.
5. Sher, K. (1994) Individual-level risk factors, in: Zucker, R., Boyd, G. & Howard, J. (Eds.) *The development of alcohol problems: exploring the biopsychosocial matrix of risk. Research Monograph No. 26*, pp. 77-108 (Rockville, MD, National Institute on Alcohol Abuse and Alcoholism, National Institutes of Health).
6. Farrell, A. (1993) Risk factors for drug use in urban adolescents: a three wave longitudinal study, *Journal of Drug Issues*, 23, pp. 443-62.
7. Kellam, S. & Brown, H. (1982) *Social, adaptional, and psychological antecedents of adolescent psychopathology ten years later* (Baltimore, MD, Johns Hopkins University Press).
8. Woody, G., Urschel, H. & Alterman, A. (1992) The many paths to drug dependence, in: Glantz, M.

& Pickens, R. W. (Eds.) *Vulnerability to drug abuse*, pp. 491-507 (Washington, DC, American Psychological Association).
9. Newcomb, M., Maddahian, E. & Bentler, P. (1986) Risk factors for drug use among adolescents: concurrent and longitudinal analyses, *American Journal of Public Health*, 76, pp. 525-31.
10. Bry, B., McKeon, P. & Pandina, R. (1982) Extent of drug use as a function of number of risk factors, *Journal of Abnormal Psychology*, 91, pp. 273-9.
11. Stein, J., Newcomb, M. & Bentler, P. (1987) An eight-year study of multiple influences on drug use and drug use consequences, *Journal of Personality and Social Psychology*, 53, pp. 1094-105.
12. Gorsuch, R. (1980) Interactive models of nonmedical drug use, in: Lettieri, D., Sayers, M. & Pearson, H. (Eds.) *Theories on drug abuse: selected contemporary perspectives. NIDA Research Monograph No 30*, pp. 18-23 (Washington, DC, US Government Printing Office).
13. Kaplan, H. & Johnson, R. (1992) Relationships between circumstances surrounding initial illicit drug use and escalation of drug use: moderating effects of gender and early adolescent experiences, in: Glantz, M. & Pickens, R. W. (Eds.) *Vulnerability to drug abuse*, pp. 299-358 (Washington, DC, American Psychological Association).
14. Dryfoos, J. (1990) *Adolescents at risk. Prevalence and prevention* (Oxford, Oxford University Press).
15. Jessor, R. (1991) Risk behavior in adolescence: a psychological framework for understanding and action, *Journal of Adolescent Health*, 12, pp. 597-605.
16. Pickens, R. W. & Svikis, D. S. (1988) Biological vulnerability to drug abuse *NIDA Research Monograph Series* (Rockville, MD, US Department of Health and Human Services).
17. Farrell, M. & Strang, J. (1991) Substance use and misuse in childhood and adolescence, *Journal of Child Psychology and Psychiatry*, 32, pp. 109-28.
18. Hill, S. (1993) Etiology, *Annual Review of Addictions Research and Treatment*, 3, pp. 127-48.
19. Cadoret, R. (1992) Genetic and environmental factors in initiation of drug use and the transition to abuse, in: Glantz, M. & Pickens, R. W. (Eds.) *Vulnerability to drug abuse*, pp. 99-114 (Washington, DC, American Psychological Association).
20. McGue, M. (1994) Genes, environment, and the etiology of alcoholism, in: Zucker, R., Boyd, G. & Howard, J. (Eds.) *The development of alcohol problems: exploring the biopsychosocial matrix of risk*, pp. 1-40 (Rockville, MD, US Department of Health and Human Services).
21. Bigelow, G., Brooner, R., McCaul, M. & Svikis, D. (1988) Biological vulnerability: treatment implications/applications, in: Pickens, R. W. & Svikis, D. S. (Eds.) *Biological vulnerability to drug abuse*, pp. 165-73 (Rockville, MD, US Department of Health and Human Services).
22. Johnstone, B. (1994) Sociodemographic, environmental, and cultural influences on adolescent drinking behavior, in: Zucker, R., Boyd, G. & Howard, J. (Eds.) *The development of alcohol problems: exploring the biopsychosocial matrix of risk. Research Monograph No. 26*, pp. 169-203 (Rockville, MD, National Institute on Alcohol Abuse and Alcoholism, National Institutes of Health).
23. Fergusson, D., Horwood, L. & Lynskey, M. (1995) The prevalence and risk factors associated with abusive or hazardous alcohol consumption in 16-year-olds, *Addiction*, 90, pp. 935-46.
24. Oldenburg, B. & Lemon, J. (1992) *Drug use among a cohort of Sydney teenagers in 1985, 1986 and 1988* (Sydney, Department of Public Health, University of Sydney).
25. Hirschi, T. (1969) *Causes of delinquency* (Berkley, CA, University of California Press).
26. Penning, M. & Barnes, G. E. (1982) Adolescent marijuana use: a review, *International Journal of the Addictions*, 17, pp. 749-91.
27. Jessor, R. & Jessor, S. (1978) Theory testing in longitudinal research on marijuana use, in: Kandel, D. (Ed.) *Longitudinal research on drug use* (Washington, Hemisphere Publishing Corporation).
28. Kandel, D. B. (1982) Epidemiological and psychosocial perspectives on adolescent drug use, *Journal of the American Academy of Child Psychiatry*, 21, pp. 328-47.
29. Kleinman, P., Wish, E., Deren, S., Rainone, G. & Morehouse, E. (1988) Daily marijuana use and problem behaviours among adolescents, *International Journal of the Addictions*, 23, pp. 87-107.
30. Jessor, R. (1976) Predicting time of onset of marijuana use: a developmental study of high school youth, *Journal of Consulting and Clinical Psychology*, 44, pp. 125-34.
31. Smith, G. M. & Fogg, C. P. (1978) Psychological predictors of early use, late use and non-use of marijuana among teenage students, in: Kandell, D. B. (Ed.) *Longitudinal research on drug use: empirical findings and methodological issues*, pp. 101-14 (Washington, DC, Hemisphere-Wiley).
32. Goldstein, J. W. & Sappinton, J. (1977) Personality characteristics of students who become heavy drug users: an MM11 study of an avant-garde, *American Journal of Drug and Alcohol Abuse*, 4,

pp. 401-12.
33. Paton, S. & Kandel, D. B. (1978) Psychological factors and adolescent illicit drug use: ethnicity and sex differences, *Adolescence*, 13, pp. 187-200.
34. Smeja, C. & Rokek, D. (1986) Youthful drug use and drug subcultures, *International Journal of the Addictions*, 21, pp. 1031-50.
35. Nutbeam, D., Smith, C., Moore, L. & Bauman, A. (1993) Warning! Schools can damage your health: alienation from school and its impact on health behaviour, *Journal of Paediatric and Child Health*, 29, pp. S25-S30.
36. Block, J., Block, J. & Keyes, S. (1988) Longitudinally foretelling drug usage in adolescence: early childhood personality and environmental precursors, *Child Development*, 59, pp. 336-55.
37. Calabrese, R. (1987) Alienation: its causes and impact on adolescent health, *High School Journal*, 7, pp. 14-8.
38. Calabrese, R. (1987) Adolescence: a growth period conducive to alienation, *Adolescence*, 22, pp. 929-38.
39. Calabrese, R. & Adams, J. (1990) Alienation: a cause for juvenile delinquency, *Adolescence*, 25, pp. 435-40.
40. Calabrese, R. & Schumer, H. (1986) The effects of service activities on adolescent alienation, *Adolescence*, 21, pp. 675-87.
41. Donovan, J., Jessor, R. & Costa, F. (1991) Adolescent health behavior and conventionality-unconventionality: an extension of problem-behavior theory, *Health Psychology*, 10, pp. 52-61.
42. Teichman, M., Barnea, Z. & Ravav, G. (1989) Personality and substance use among adolescents: a longitudinal study, *British Journal of Addiction*, 84, pp. 181-90.
43. Jacob, T. & Leonard, K. (1994) Family and peer influences in the development of adolescent alcohol abuse, in: Zucker, R., Boyd, G. & Howard, J. (Eds.) *The development of alcohol problems: exploring the biopsychosocial matrix of risk. Research Monograph No. 26*, pp. 123-155 (Rockville, MD, National Institute on Alcohol Abuse and Alcoholism, National Institutes of Health).
44. Newcomb, M. (1994) Commentary. Families, peers, and adolescent alcohol abuse: a paradigm to study multiple causes, mechanisms, and outcomes, in: Zucker, R., Boyd, G. & Howard, J. (Eds.) *The development of alcohol problems: exploring the biopsychosocial matrix of risk. Research Monograph No. 26*, pp. 157-68 (Rockville, MD, National Institute on Alcohol Abuse and Alcoholism, National Institutes of Health).
45. Hawkins, J., Lishner, D. & Catalano, R. (1985) Childhood predictors and the prevention of adolescent substance abuse, in: Jones, C. & Battjes, R. (Eds.) *Etiology of drug abuse: implications for prevention* (Rockville, National Institute on Drug Abuse).
46. Patterson, G., Reid, J. & Dishion, T. (1992) *Antisocial boys* (Eugene, OR, Castilia Publishing Company).
47. Crundall, I. (1993) Correlates of student substance use, *Drug and Alcohol Review*, 12, pp. 271-6.
48. Pandina, R. & Schuele, J. (1983) Psychosocial correlates of adolescent alcohol and drug use, *Journal of Studies on Alcohol*, 44, pp. 950-73.
49. Brook, J., Brook, D., Gordon, A., Whiteman, M. & Cohen, P. (1990) The psychosocial etiology of adolescent drug use: a family interactional approach, *Genetic, Social and General Psychology Monographs*, 116.
50. Climent, C. E., de Aragon, L. V. & Plutchik, R. (1989) Prediction for risk of drug use in high school students, *International Journal of the Addictions*, 24, pp. 1053-64.
51. Dembo, R. (1987) Physical abuse, sexual victimisation and illicit drug use: a structural analysis among high risk adolescents, *Journal of Adolescence*, 10, pp. 13-33.
52. Gfroerer, J. (1987) Correlation between drug use by teenagers and drug use by older family members, *American Journal of Drug and Alcohol Abuse*, 13, pp. 95-108.
53. Newcomb, M., Huba, G. & Bentler, P. (1983) Mother's influence on the drug use of their children: confirmatory tests of direct modeling and mediational theories, *Developmental Psychology*, 19, pp. 714-26.
54. Barnes, G. (1981) Drinking among adolescents: a subcultural phenomenon or a model of adult behaviors, *Adolescence*, 16, pp. 211-29.
55. Huba, G. & Bentler, P. (1980) The role of peer and adult models for drug taking at different stages in adolescence, *Journal of Youth and Adolescence*, 9, pp. 449-65.
56. Sheridan, M. (1995) A proposed intergenerational model of substance abuse, family functioning, and abuse/neglect, *Child Abuse & Neglect*, 19, pp. 519-30.
57. Dore, M., Doris, J. & Wright, P. (1995) Identifying substance abuse in maltreating families: a child

welfare challenge, *Child Abuse and Neglect*, 19, pp. 531-43.
58. Lecca, P. & Watts, T. (1993) *Preschoolers and substance abuse: strategies for prevention and intervention* (New York, The Haworth Press).
59. Fergusson, D., Horwood, L. & Lynskey, M. (1994) Parental separation, adolescent psychopathology, and problem behaviors, *Journal of the American Academy of Child and Adolescent Psychiatry*, 33, pp. 1122-33.
60. Resnick, M., Harris, L. & Blum, R. (1993) The impact of caring and connectedness on adolescent health and well-being, *Journal of Paediatric Child Health*, 29, pp. S3-S9.
61. Voorhis, P. V., Cullen, P., Mathers, R. & Garner, C. (1988) The impact of family structure and quality on delinquency: a comparative assessment of structural and functional factors, *Criminology*, 26, pp. 235-61.
62. Kandel, D. B. & Andrews (1987) Processes of adolescent socialization by parents and peers, *International Journal of the Addictions*, 22, pp. 319-42.
63. Brook, J., Cohen, P., Whiteman, M. & Gordon, A. (1992) Psychosocial risk factors in the transition from moderate to heavy use or abuse of drugs, in: Glantz, M. & Pickens, R. W. (Eds.) *Vulnerability to drug abuse*, pp. 359-388 (Washington, DC, American Psychological Association).
64. Brennan, J. (1993) Family relationships and the development of social competence in adolescence, *Journal of Paediatric and Child Health*, 29, pp. S37-S41.
65. Kalajian, B. (1992) Family involvement: a more total recovery. *Proceedings of the 13th World Conference of Therapeutic Communities, Athens: 1990*, pp. 103-6 (Athens, World Conference of Therapeutic Communities).
66. Obermeier, G. & Henry, P. (1989) Adolescent inpatient treatment, in: Henry, P. (Ed.) *Practical Approaches in Treating Adolescent Chemical Dependency*, pp. 163-82 (New York, Hawthorn).
67. Schroeder, E. (1989) Therapy for the chemically dependent family, in: Henry, P. (Ed.) *Practical Approaches in Treating Adolescent Chemical Dependency*, pp. 95-130 (New York, Hawthorn).
68. Shoemaker, R. & Sherry, P. (1991) Posttreatment factors influencing outcome in adolescent chemical dependency treatment, *Journal of Adolescent Chemical Dependency*, 2, pp. 89-106.
69. Weidman, A. (1985) Engaging the families of substance abusing adolescents in family therapy, *Journal of Substance Abuse Treatment*, 2, pp. 97-105.
70. Szapocznik, J., Perez-Vidal, A., Brickman, A. *et al.* (1988) Engaging adolescent substance abusers and their families in treatment; a strategic, structural, systems approach, *Journal of Consulting and Clinical Psychology*, 56, pp. 552-7.
71. Santisteban, D. & Szapocznik, J. (1994) Bridging theory, research and practice to more successfully engage substance abusing youth and their families into therapy, *Journal of Child and Adolescent Substance Abuse*, 3, pp. 9-24.
72. McKay, J. & Buka, S. (1994) Issues in the treatment of antisocial adolescent substance abusers, *Journal of Child and Adolescent Substance Abuse*, 3, pp. 59-81.
73. Howard, J. (1994) Irrelevant, unapproachable or boring: treatment issues for drug-using youth, in: Ross, J. (Ed.) *Health for all? Social justice issues in the alcohol and other drug field. Proceedings from the Sixth National Drug and Alcohol Research Centre annual symposium, December 1993*, pp. 92-119 (Sydney, National Drug and Alcohol Research Centre, University of New South Wales).
74. Stanton, M. & Landau-Stanton, J. (1990) Therapy with families of adolescent substance abusers, in: Milkman, H. & Sederer, L. (Eds.) *Treatment choices for alcoholism and substance abuse* (Massachusetts, Lexington Books).
75. Dembo, R., Williams, L., Schmeidler, J. *et al.* (1992) A structural model examing the relationship between physical child abuse, sexual victimisation, and marijuana/hashish use in delinquent youth: a longitudinal study, *Violence and Victims*, 7, pp. 41-62.
76. Prevention and Risk Reduction Unit (1991) *Minnesota student survey 1991. A report on special populations: alternative schools area learning centres, corrections/detention centres, residential treatment centres* (St Paul, MN, Minnesota Department of Education).
77. Bayatpour, M., Wells, R. & Holford, S. (1992) Physical and sexual abuse as predictors of substance use and suicide among pregnant teenagers, *Journal of Adolescent Health*, 13, pp. 128-32.
78. Janikowski, T. & Glover, N. (1994) Incest and substance abuse: implications for treatment professionals, *Journal of Substance Abuse Treatment*, 11, pp. 177-83.
79. De La Rosa, M. & Recio-Adrados, J. (1993) Drug abuse among minority youth: advances in research and methodology *NIDA Research Monograph* (Rockville, MD, National Institute on Drug

Abuse).
80. Spathopoulos, E. & Bertram, S. (1991) *Drug and alcohol research amongst non-English speaking background communities in Australia: literature review* (Sydney, New South Wales Department of Health).
81. Kahn, M., Hunter, E., Heather, N. & Tebbutt, J. (1990) Australian Aborigines and alcohol: a review, *Drug and Alcohol Review*, 10, pp. 351-66.
82. Fleming, J., Watson, C., McDonald, D. & Alexander, K. (1991) Drug use patterns in Northern Territory Aboriginal communities 1986-1987, *Drug and Alcohol Review*, 10, pp. 367-80.
83. Hunter, E., Hall, W. & Spargo, R. (1992) Patterns of alcohol consumption in the Kimberley Aboriginal population, *Medical Journal of Australia*, 156, pp. 764-8.
84. Brady, M. (1992) *Heavy metal: the social meaning of petrol sniffing in Australia* (Canberra, Aboriginal Studies Press).
85. Webster, I. (1985) Overview: alcohol and drug problems in youth, Paper presented at the *Autumn School of Studies on Alcohol and Drugs*.
86. Smart, R., Adlaf, E. & Walsh, G. (1994) Neighbourhood socio-economic factors in relation to student drug use and programs, *Journal of Child and Adolescent Substance Abuse*, 3, pp. 37-46.
87. Single, E. (1989) The impact of marijuana decriminalization: an update, *Journal of Public Health Policy*, Winter, pp. 456-66.
88. Holder, H. (1994) Commentary: Alcohol availability and accessibility as part of the puzzle: thoughts on alcohol problems and young people, in: Zucker, R., Boyd, G. & Howard, J. (Eds.) *The development of alcohol problems: exploring the biopsychosocial matrix of risk. NIDA Research Monograph No. 26*, pp. 249-254 (Rockville, MD, National Institute on Alcohol Abuse and Alcoholism, US Department of Health and Human Services).
89. Kleiman, M. (1989) *Marijuana: costs of abuse, costs of control* (New York, Greenwood Press).
90. Marks, R. (1994) Cannabis law: an analysis of costs, *Drug and Alcohol Review*, 13, pp. 341-6.
91. Nadelmann, E. & Courtwright, D. (1993) Should we legalise drugs? History answers, *American Heritage*, Feb/Mar, pp. 41-8.
92. Krauss, M. & Lazear, E. (1991) Searching for alternatives: drug-control policy in the United States (Stanford, CA, Hoover Institution Press).
93. Single, E. (1994) The impact of social and regulatory policy on drinking behavior, in: Zucker, R., Boyd, G. & Howard, J. (Eds.) *The development of alcohol problems: exploring the biopsychosocial matrix of risk*, pp. 209-48 (Rockville, MD, US Department of Health and Human Services).
94. Eckersley, R. (1988) *Casualties of change: the predicament of youth in Australia* (Canberra, Commission for the Future).
95. Haynes, P. & Ayliffe, G. (1991) Locus of control of behaviour: is high externaligy associated with substance misuse?, *British Journal of Addictions*, 86, pp. 1111-7.
96. Moncher, M., Holden, G. & Schinke, S. (1991) Psychosocial correlates of adolescent substance use: a review of current etiological constructs, *International Journal of the Addictions*, 26, pp. 377-414.
97. Schroeder, D., Laflin, M. & Weis, D. (1993) Is there a relationship between self-esteem and drug use? Methodological and statistical limitations of the research, *Journal of Drug Issues*, 23, pp. 645-65.
98. Swaim, R., Oetting, E., Edwards, R. & Beauvais, F. (1989) Links from emotional distress to adolescent drug use: a path model, *Journal of Consulting and Clinical Psychology*, 57, pp. 227-31.
99. Bukstein, O., Brent, D. & Kaminer, Y. (1989) Comorbidity of substance abuse and other psychiatric disorders in adolescents, *American Journal of Psychiatry*, 146, pp. 1131-41.
100. Meyer, R. (1986) *Psychopathology and addictive disorders* (New York, Guilford Press).
101. Dixon, L., Haas, G., Weiden, P., Sweeney, J. & Frances, A. (1991) Drug abuse in schizophrenic patients: clinical correlates and reasons for use, *American Journal of Psychiatry*, 148, pp. 224-30.
102. El-Guebaly, N. (1990) Substance abuse and mental disorders: the dual diagnoses concept, *Canadian Journal of Psychiatry*, 35, pp. 261-7.
103. Friedman, A., Utada, A., Glickman, N. & Morrissey, M. (1987) Psychopathology as an antecedent and as a 'consequence' of substance use in adolescence, *Journal of Drug Education*, 17, pp. 233-44.
104. Kandel, D., Kessler, R. & Margulies, R. (1978) Antecedents of adolescent initiation into stages of drug use: a developmental analysis, in: Kandel, D. (Ed.) *Longitudinal research on drug use: empirical findings and methodological issues*, pp. 73-99 (Washington, DC, Hemisphere-Wiley).
105. Ross, M. W. & Rosser, B. R. S. (1989) Education and AIDS risks: a review, *Health Education*

Research, 4, pp. 273-84.
106. Bloom, B. S., Krathwohl, D. R. & Masia, B. B. (1964) *Taxonomy of educational objectives* (London, Longmans).
107. Janz, N. K. & Becker, M. H. (1984) The health belief model: a decade later, *Health Education Quarterly*, 11, pp. 1-47.
108. Ajzen, I. & Fishbein, M. (1980) *Understanding attitudes and predicting behavior* (Eaglewood Cliffs, NJ, Prentice-Hall).
109. Scarpitti, F. & Datesman, S. (1980) Drugs and the youth culture *Annual reviews of Drug and Alcohol Abuse* (Beverley Hills, CA, Sage Publications).
110. Stuart, R. (1974) Teaching the facts about drugs: pushing or preventing?, *Journal of Educational Psychology*, 66, pp. 189-201.
111. Hawthorne, G., Garrard, J. & Dunt, D. (1995) Does Life Education's drug education programme have a public health benefit?, *Addiction*, 90, pp. 205-15.
112. Pearlin, L. (1981) The stress process, *Journal of Health and Social Behavior*, 22, pp. 337-56.
113. Bruns, C. & Geist, C. (1984) Stressful life events and drug use among adolescents, *Journal of Human Stress*, 10, pp. 135-139.
114. White, H., Johnson, V. & Horwitz, A. (1986) An application of three deviance theories to adolescent substance use, *International Journal of the Addictions*, 21, pp. 347-66.
115. Wills, T. & Shiffman, S. (1985) Coping and substance use: a conceptual framework, in: Shiffman, S. & Wills, T. (Eds.) *Coping and substance use* (New York, Academic Press).
116. Hurrelmann, K. (1990) Health promotion for adolescents: preventive and corrective strategies against problem behaviour, *Journal of Adolescence*, 13, pp. 231-50.
117. Shiffman, S. & Wills, T. (1985) *Coping with substance use* (Orlando, Academic Press Inc.).
118. Marlatt, G. & Gordon, J. (1980) Determinants of relapse: implications for the maintenance of behavior change, in: Davidson, P. & Davidson, S. (Eds.) *Behavioral medicine: changing health lifestyles* (New York, Brunner/Mazel).
119. Rhodes, J. & Jason, L. (1988) *Preventing substance abuse among children and adolescents* (New York, Pergamon Press).
120. Kadden, R., Carroll, K., Donovan, D. *et al.* (1994) *Cognitive-behavioral coping skills therapy manual. A clinical research guide for therapists treating individuals with alcohol abuse and dependence* (Rockville MD, National Institute on Alcohol Abuse and Alcoholism).
121. DuBois, D., Felner, R., Meares, H. & Krier, M. (1994) Prospective investigation of the effects of socioeconomic disadvantage, life stress, and social support on early adolescent adjustment, *Journal of Abnormal Psychology*, 103, pp. 511-22.
122. Block, J., Keyes, S. & Block, J. (1985) *Childhood personality and environmental antecedents of drug use: a prospective longitudinal study* (Berkeley, CA, University of California).
123. Richter, S., Brown, S. & Mott, M. (1991) The impact of social support and self-esteem on adolescent substance abuse treatment outcome, *Journal of Substance Abuse*, 3, pp. 371-85.
124. Keogh, T. (1994) Approaches to the psychological treatment of juveniles in detention, in: Aktinson, L. & Gerull, S. (Eds.) *National Conference on Juvenile Detention. Proceedings of a conference held 10-13 August, 1993*, pp. 149-161 (Canberra, Australian Institute of Criminology).
125. Swadi, H. (1992) Relative risk factors in detecting adolescent drug abuse, *Drug and Alcohol Dependence*, 29, pp. 253-4.
126. Oetting, E. & Beauvais, F. (1987) Peer cluster theory, socialization, characteristics, and adolescent drug use, *Journal of Counselling Psychology*, 34, pp. 205-13.
127. Ried, L., Martinson, O. & Weaver, L. (1987) Factors associated with the drug use of fifth through eighth grade students, *Journal of Drug Education*, 17, pp. 149-61.
128. Wills, T. & Vaughn, R. (1989) Social support and substance use in early adolescence, *Journal of Behavioural Medicine*, 12, pp. 321-39.
129. Hoffman, J. (1993) Exploring the direct and indirect family effects on adolescent drug use, *Journal of Drug Issues*, 23, pp. 535-57.
130. Sutherland, E. (1947) *Principles of criminology* (Philadelphia, Lippincott).
131. Bandura, A. (1977) *Social learning theory* (Englewood Cliffs, NJ, Prentice-Hall).
132. Akers, R., Krohn, M., Lanza-Kaduce, L. & Radosevich, M. (1979) Social learning and deviant behavior: a specific test of a general theory, *American Sociological Review*, 44, pp. 636-655.
133. Coggans, N. & McKellar, S. (1994) Drug use amongst peers: peer pressure or peer preference?, *Drugs: Education, Prevention and Policy*, 1, pp. 15-26.
134. Kandel, D. (1978) Homophily, selection, and socialization in adolescent friendships, *American*

Journal of Sociology, 84, pp. 427-36.
135. Dembo, R., Williams, L., Wothke, W. & Schmeidler, J. (1994) The relationships among family problems, friends' troubled behavior, and high risk youths' alcohol/other drug use and delinquent behavior: a longitudinal study, *International Journal of the Addictions*, 29, pp. 1419-42.
136. Snyder, J. & Huntley, D. (1990) Troubled families and troubled youth: the development of anti-social behavior and depression in children, in: Leone, P. (Ed.) *Understanding troubled and troubling youth* (Newbury Park, CA, Sage Publications).
137. Van Hasselt, V., Null, J., Kempton, T. & Bukstein, O. (1993) Social skills and depression in adolescent substance abusers, *Addictive Behaviours*, 18, pp. 9-18.
138. Hover, S. & Rosenthal-Gaffney, L. (1991) The relationship between social skills and adolescent drinking, *Alcohol and Alcoholism*, 26, pp. 207-14.
139. Dielman, T., Butchart, A., Shope, J. & Miller, M. (1990-91) Environmental correlates of adolescent substance use and misuse: implications for prevention programs, *International Journal of the Addictions*, 25, pp. 855-80.
140. Dishion, T., Patterson, G., Stoolmiller, M. & Skinner, M. (1991) Family, school and behavioural antecedents to early adolescent involvement with antisocial peers, *Developmental Psychology*, 27, pp. 172-80.
141. Elliott, D. S., Huizinga, D. & Ageton, S. S. (1982) *Expaining delinquency and drug use: Report No. 21* (Boulder, Behavioral Research Institute).
142. Newcomb, M. & Bentler, P. (1989) Substance use and abuse among children and teenagers, *American Psychologist*, 44, pp. 242-8.
143. Spivack, G. (1983) High risk early behaviors indicating vulnerability to delinquency in the community and school (National Institute of Juvenile Justice and Delinquency Prevention, Office of Juvenile Justice and Delinquency Prevention, Law Enforcement Assistance Administration, Washington DC).
144. Kazdin, A. (1995) Conduct disorder, in: Verhulst, F. & Koot, H. (Eds.) *The epidemiology of child and adolescent psychopathology*, pp. 258-90 (Oxford, Oxford University Press).
145. Johnston, L. D., O'Malley, P. & Evelard, L. (1978) Drugs and delinquency: a search for causal connections, in: Kandel, D. B. (Ed.) *Longitudinal research on drug use*, pp. 137-156 (Washington DC, Hemisphere Publishing Company).
146. Loeber, R. (1988) Natural histories of conduct problems, delinquency and associated substance use: evidence for developmental progressions, in: Lahey, B. B. & Kazdin, A. E. (Eds.) *Advances in clinical child psychology*, pp. 73-124 (New York, Plenum Press).
147. Young, S., Mikulich, S., Goodwin, M. *et al.* (1995) Treated delinquent boys' substance use: onset, pattern, relationship to conduct and mood disorders, *Drug and Alcohol Dependence*, 37, pp. 149-62.
148. Shaw, D. & Bell, R. (1993) Developmental theories of parental contributors to antisocial behavior, *Journal of Abnormal Child Psychology*, 21, pp. 493-518.
149. Kazdin, A. (1987) Treatment of antisocial behavior in children: current status and future directions, *Psychological Bulletin*, 102, pp. 187-203.
150. Yamaguchi, K. (1990) Drug use and its social covariates from the period of adolescence to young adulthood: some implications from longitudinal studies, in: Galanter, M. (Ed.) *Recent developments in alcoholism*, pp. 125-44 (New York, Plenum).
151. Kandel, D. & Davies, M. (1992) Progression to regular marijuana involvement: phenomenology and risk factors for near-daily use, in: Glantz, M. & Pickens, R. W. (Eds.) *Vulnerability to drug abuse*, pp. 211-242 (Washington, DC, American Psychological Association).
152. Robins, L. N. (1978) Sturdy childhood predictors of adult antisocial behaviour: replications from longitudinal studies, *Psychological Medicine*, 8, pp. 611-22.
153. Kandel, D. & Logan, J. (1984) Patterns of drug use from adolescence to young adulthood: I. Periods of risk for initiation, continued use, and discontinuation, *American Journal of Public Health*, 74, pp. 660-6.
154. Trad, P. (1994) Developmental vicissitudes that promote drug abuse in adolescents, *American Journal of Drug and Alcohol Abuse*, 20, pp. 459-81.
155. Carnegie Council on Adolescent Development (1989) *Turning points: preparing American youth for the 21st century: the report of the Task Force on Education of Young Adolescents* (Washington, DC, Carnegie Council on Adolescent Development).
156. Lemert, E. (1967) *Human deviance, social problems, and social control* (Englewood Cliffs, NJ, Prentice-Hall).

157. Kaplan, H., Johnson, R. & Bailey, C. (1988) Explaining adolescent drug use: an elaboration strategy for structural equations modeling, *Psychiatry*, 51, pp. 142-63.
158. Newcomb, M. (1992) Understanding the multidimensional nature of drug use and abuse: the role of consumption, risk factors and protective factors, in: Glantz, M. & Pickens, R. W. (Eds.) *Vulnerability to drug abuse*, pp. 255-97 (Washington, DC, American Psychological Association).
159. Jessor, R. & Jessor, S. L. (1977) *Problem behavior and psychosocial development: a longitudinal study of youth* (New York, Academic Press).
160. Cunningham, J., Sobell, L., Freedman, J. & Sobell, M. (1994) Beliefs about the causes of substance abuse: a comparison of three drugs, *Journal of Substance Abuse*, 6, pp. 219-26.
161. Lettieri, D., Sayers, M. & Pearson, H. (1980) Theories on drug abuse: selected contemporary perspectives *National Institute on Drug Abuse Research Monograph Series* (Washington, DC, US Government Printing Office).
162. Lettieri, D. (1985) A review of explanations and models of explanation, *Advances in Alcohol and Substance Abuse*, 4, pp. 9-40.
163. Petraitis, J., Flay, B. & Miller, T. (1995) Reviewing theories of adolescent substance use: organising pieces in the puzzle, *Psychological Bulletin*, 117, pp. 67-86.
164. Zinberg, N. (1984) *Drug, set and setting: the basis for controlled intoxicant use* (New Haven, Yale University Press).
165. Zucker, R., Boyd, G. & Howard, J. (1994) The development of alcohol problems: exploring the biopsychosocial matrix of risk. Research Monograph No. 26 (Rockville, MD, National Institute on Alcohol Abuse and Alcoholism, National Institutes of Health).
166. Jessor, R. (1987) Problem-behavior theory, psychosocial development, and adolescent problem drinking, *British Journal of Addiction*, 82, pp. 331-42.
167. May, C. (1993) Resistance to peer group pressure: an inadequate basis for alcohol education, *Health Education Research*, 8, pp. 159-65.
168. Bacon, S. (1987) Alcohol problem prevention: a common sense approach, *Journal of Drug Issues*, 17, pp. 369-93.
169. Moore, D. (1990) Drinking, the construction of ethnic identity and social process in a Western Australian youth subculture, *British Journal of Addictions*, 85, pp. 1265-78.
170. Moore, D. (1993) Speeding, ecking and tripping: ethnographic notes from a small world of psychostimulant use, in: MacEvoy, M., Flaherty, B. & Burrows, D. (Eds.) *Pschostimulant use in Australia* (Sydney, National Campaign Against Drug Abuse).
171. Moore, D. (1993) Social controls, harm minimisation and interactive outreach: the public health implications of an ethnography of drug use, *Australian Journal of Public Health*, 17, pp. 58-67.
172. Programme on Substance Abuse (1995) *Street children, substance use and health: training for street educators (draft)* (Geneva, World Health Organisation).
173. Reilly, C. & Homel, P. (1987) *1986 survey of recreational drug use and attitudes of 15 to 18 year olds in Sydney* (Sydney, New South Wales Drug and Alcohol Directorate).
174. Spooner, C., Flaherty, B. & Homel, P. (1992) *Results of a street intercept survey of young illicit drug users in Sydney* (Sydney, New South Wales Drug and Alcohol Directorate).
175. Bungey, J. & Faulkner, C. (1990) *Adelaide city youth and drugs. Second National Drug Indicators Conference. 12-14 March 1990* (Canberra,).
176. Zibert, E., Hando, J. & Howard, J. (1994) *Patterns of drug use and indicators of harm among persons detained in New South Wales Juvenile Justice centres 1993* (Sydney, Department of Juvenile Justice).
177. Wood, P., Cochran, J., Pfefferbaum, B. & Arneklev, B. (1995) Sensation-seeking and delinquent substance use: an extension of learning theory, *Journal of Drug Issues*, 25, pp. 173-93.
178. Zuckerman, M. (1987) Biological connection between sensation seeking and drug abuse, in: Engel, J. & Oreland, L. (Eds.) *Brain Reward Systems and Abuse* (New York, Raven Press).
179. Khantzian, E. (1987) The self-medication hypothesis of addictive disorders: focus on heroin and cocaine dependence, *The American Journal of Psychiatry*, 142, pp. 1259-64.
180. Moore, D. & Saunders, B. (1991) Youth drug use and the prevention of problems: why we've got it all wrong, *International Journal on Drug Policy*, 2, pp. 29-33.

181. Brown, H. (1991) *Report on services required for adolescents with drug-related problems* (Prahran, Victoria, Taskforce Community Involvement Centre).
182. Binion, A., Miller, C., Beauvais, F. & Oetting, E. (1988) Rationales for the use of alcohol, marijuana, and other drugs by eighth-grade Native American and Anglo youth, *International Journal of the Addictions*, 23, pp. 47-64.

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3 Consequences of abuse

3.1 Introduction

The consequences of substance misuse are reviewed for two main reasons. Firstly, this review is intended to illustrate why we are concerned with adolescent substance abusers. Second, it can assist the assessment and case-planning process by identifying those consequences that might already be evident and need to be dealt with immediately, or that the adolescent is at risk of experiencing, unless specific interventions are implemented.

As an introduction to this section, Czechowitz's summary of the range of consequences of adolescent substance misuse is cited:

> Youthful users are more vulnerable to life-threatening accidents and injuries; impulsive and risk-taking behaviours; illegal activity; physical complications; sexually transmitted diseases, including acquired immune deficiency syndrome (AIDS); and impairment of memory, cognitive, and motor performance. In addition, the effects of psychoactive drugs on the emotional development of adolescents and young adults can interfere with their ability to address important developmental challenges at this stage, as well as subsequent stages of life. [1] (p. 205)

Substance-related problems can be divided into:

- problems for the user and problems for others such as the users' immediate circle of friends and family, the workplace, for government and community services, and for society as a whole
- physical health, legal, economic, social, family, and psychological/emotional problems
- acute and chronic problems
- problems about the use of a single substance and problems about polysubstance use
- problems caused directly by substance use, problems where substance use is a contributing factor, and problems where substance use is related, but not causal.

Substance-related problems can differ according to the type of substance/s used; the dose (this can vary deliberately, or by chance); the duration and frequency of use; the manner of administration; and the behaviours associated with use. These variables can be affected by factors such as availability of various substances, the laws relating to use, and the reasons for use. An example of the effect of duration and frequency of use is provided by Chesher. [2] Chesher discussed how amphetamines have been widely used for therapeutic purposes with a low incidence of adverse effects. However, when these substances are used in high doses at frequent intervals over a short time-span until either the substance runs out or the user is too exhausted to continue (this pattern is known as a 'binge' or a 'run') amphetamine psychosis can result. This state is characterised by psychotic symptoms, including paranoid delusions and uncontrolled violent behaviour can occur. [3] Abrupt cessation of use after a period of high dose use is frequently associated with severe psychic depression that occasionally results in suicide attempts [3]. Similarly, ecstasy has been used for therapeutic purposes with a low incidence of problems. [4] In contrast to amphetamines, the potential for abuse of ecstasy has been found to be low because tolerance to the positive effects of ecstasy develops with increased use while the negative effects tend to increase. [5] Thus, the type of substance and the pattern of use of that substance influence the incidence of problems associated with use.

The effects of type of substance and extent of use on problems were also illustrated by investigations by Anthony and colleagues, using data collected in the context of a multi-site collaborative study of mental disorders in the community. Firstly, Anthony and Petronis examined a number of differences in indicators of substance dependence among 611 cocaine users and 126 heroin users. [6] The highest prevalence of adverse consequences was reported among heroin users, followed by cocaine users, and then cannabis users. Second, to investigate the effects of the amount of substance use on health problems, Trinkoff, Ritter and Anthony compared the self-reported consequences of cocaine use by 'sustained daily cocaine users' and 'never daily users'. [7] Sustained daily users were those who reported that they had used cocaine every day for at least two weeks at some time in their life. 'Never-daily users' were cocaine users who reported that they had never used on a daily basis for two weeks or more. Overall, sustained daily users reported a higher prevalence of all adverse consequences as

compared to the never-daily users. Consequences included a) withdrawal (rarely experienced by never daily users) b) tolerance c) inability to decrease use d) social problems with family, friends, police, or work e) psychological problems such as feeling crazy, paranoia, or depression, and f) health problems such as physical complaints and overdose (rarely experienced by never-daily users). In short, the type and severity of consequences of using illicit substances vary according to the substance being used and the level of substance use.

Health problems also vary with the mode of administration. The injection of substances is associated with communicable diseases such as HIV, viral hepatitis, septicemia and bacterial endocarditis when injecting equipment is shared; abscesses, phlebitis, and infections at, or around, the sites of injection because of incorrect injection techniques, non-sterile needles or repeated injections in the same spot; and blood vessels can become blocked by insoluble particles. [3] The use of plastic bags to inhale volatile substances has caused 16% of the fatalities relating to volatile solvent abuse. [8] When a person falls asleep, or otherwise falls unconscious, while a plastic bag containing the inhalant remains in place over the mouth or nose, death from suffocation occurs. [3] Thus, the mode of administration can be hazardous to health, over and above any risk associated with the substance being ingested.

It is the problems associated with substance misuse that motivate the adolescents themselves, their carers, and/or society (including those charged with acting on behalf of society such as the Departments of Health, Juvenile Justice, and Community Services) to seek drug-treatment services. Following is a description of substance-related mortality and morbidity figures and a more detailed look at some of the more significant problems that have been associated with adolescent substance use.

3.2 Substance-related mortality

Using aetiological fractions[12] on data for substance-caused deaths, estimates of deaths caused by substance use have been made (see Tables 3.1 and 3.2). [9] In both the general population and those aged 15 to 19, substance-related deaths accounted for almost one in five deaths. Most substance-caused deaths among the general population were attributable to tobacco (84%), few were attributable to illicit substances (0.4%). For those aged 15 to 19, on the other hand, most substance-caused deaths were alcohol-related (83%) and a significant minority were attributable to illicit substances (17%).

Table 3.1: Percentages of all causes of death that were substance-related by substance involved for adolescents aged 15 to 19 and for the total population, 1992

Substance	15 to 19	All ages
alcohol	15.1	2.9

[12]An aetiological fraction uses relative-risk data to attribute a certain proportion of deaths to substance use. Specifically: with a given outcome (in this case, death), exposure factor (substance use) and population (general population), the aetiological (or attributable) fraction among the exposed is the proportion by which the incidence rate of the outcome among those exposed would be reduced if the exposure were eliminated. See Last, J. (Ed.) (1988). A dictionary of epidemiology (2nd edn). Oxford: Oxford University Press.

tobacco	0.1	15.3
illicits	3.1	0.4
total	18.3	18.6

Table 3.2: Substance-related deaths by substance involved for adolescents aged 15 to 19 and for the total population, 1992 (percentages of substance-related causes of death)

Substance	**15 to 19** (number of deaths = 140)	**All ages** (number of deaths = 23,068)
alcohol	82.5	15.6
tobacco	0.6	82.3
illicits	16.9	2.1
total	100.0	100.0

Of the 115 alcohol-related deaths among adolescents aged 15 to 19, most resulted from road injuries or suicide, a minority resulted from drowning, or assault. Nearly all of the deaths related to illicit substance use among adolescents aged 15 to 19 were by suicide. Heroin overdose does not appear to be a major issue for adolescents. The mean age of heroin-related overdose deaths in New South Wales in 1992 was 30 years, none were recorded for anybody aged less than 18 years. [10] Similarly, non-fatal heroin-related overdoses have been found to be a problem among experienced adult users, not adolescent users. [11]

There are a number of problems with these mortality statistics. Firstly, as discussed by Sullivan, mortality figures only indicate the statistically assessable harm, without adjusting for the prevalence of substance use, so they do not reliably express either the comparative incidence of substance-caused mortality, or their innate harmfulness. [12] Second, mortality might not occur until some years after adolescence. People who are heavily involved in substance use during their adolescence have been found to have five-times the mortality rates of others during early adulthood. [13] Third, while drink-driving is one clear indicator of substance misuse, it does not necessarily indicate substance abuse, as defined by the DSM-IV. Finally, substance-related deaths represent the 'tip of the iceberg' in relation to substance problems. Community concern with substance misuse tends to centre also on the medical, psychological, and social problems, associated with substance misuse. Consequently, a broader look at the consequences of substance misuse is required.

3.3 Substance-related morbidity: general overview

3.3.1 Hospital episodes

English and Holman have estimated the number of hospital episodes attributable to specific substance use (Table 3.3). [9] It appears that while a significant number of hospital episodes are attributable to substance use, substance use accounts for a minority of all hospital episodes. The percentage attributable to substance use among adolescents aged 15 to 19 was 3.8% for males and 2.5% for females. Among the general population, the percentage attributable to substance use was 9.0% for males and 3.7% for females.

Table 3.3: Estimated numbers of hospital episodes (excluding nursing homes) for substance-related conditions in 1992, by gender and age group

	15 to 34		All ages	
Substance	**Male**	**Female**	**Male**	**Female**
alcohol	3,889	1,423	45,600	25,993
tobacco	249	566	66,636	31,737
illicits	221	182	2,928	2,462
Total number (substance caused):	4,359	2,171	115,164	60,192
Total number (all causes):	56,970	86,594	1,280,801	1,632,737

Of 6,530 hospital episodes relating to substance use among adolescents aged 15 to 19 and 175,356 hospital episodes relating to substance use among the general population, it appears that the majority of hospital episodes among adolescents aged 15 to 19 relate to alcohol use, whereas the majority of hospital episodes among the general population relate to tobacco use (Table 3.4). This difference probably reflects the longer time generally required for tobacco-related morbidity (for example, cancer) relative to alcohol-related morbidity (for example, injury). The higher percentage of tobacco-related hospital episodes for females aged 15 to 19 relative to same-age males is a result of the attribution of smoking to spontaneous abortions, antepartum haemhorraging, and hypertension in pregnancy.

Table 3.4: Hospital episodes (excluding nursing homes) for substance-related conditions in 1992, by substance type, gender, and age group

	15 to 34		All ages	
Substance	**Males**	**Females**	**Males**	**Females**
alcohol	89.2	65.5	39.6	43.2
tobacco	5.7	26.1	57.9	52.7
illicits	5.1	8.4	2.5	4.1
total	100.0	100.0	100	100.0

Most of the alcohol-related hospital admissions for males aged 15 to 19 related to injuries, particularly injuries from road accidents. For females aged 15 to 19 most of the alcohol-related hospital admissions related to spontaneous abortion, with injuries a second major cause of alcohol-related admission.

Hospital data have some use for setting the context for morbidity relating to substance misuse, however, it does not necessarily identify whether admissions resulted from one-off accidents, or as a result of lifestyles largely affected by substance use, nor does it give the full extent of physical harm resulting from substance misuse: not all medical problems result in a hospital admission.

3.3.2 Substance-caused pathologies

The major 'pathologies' developing from the use of specific substances have been summarised by the Commonwealth Department of Health, Housing, Local Government, and Community Services. [14] The Commonwealth's summary forms the basis of Table 3.5.

Table 3.5: Substance-specific pathology

Substance	Pathology possible in the short term / acute effects	Medium-long term pathology /chronic effects
tobacco	-	carcinoma of larynx, oropharynx and lungs; hypertension, coronary heart disease, cerebro-vascular accidents, peripheral artery disease; chronic obstructive airways disease
alcohol	suicide; acute withdrawal effects; trauma (injuries); acute toxic effects (overdose)	carcinoma of oropharynx and oesophagus; oesophageal varices, gastric bleeding; hypertension; alcohol-related brain damage; pancreatitis, diabetes; gout; psychoses
benzodiazepines, barbiturates	withdrawal syndromes	chronic toxic effects: confusion, ataxia
amphetamines, cocaine	acute toxic effects: toxic psychoses (paranoia), death	
Injecting drug use	septic conditions following injecting drug use, for example, septicemia, endocarditis, HIV, hepatitis B, hepatitis C	

Table 3.5 illustrates that much of the medical harm associated with substance use occurs in the long term, usually after years of regular use. However, long-term health problems are of less concern to service providers dealing with adolescents. Firstly, with their focus on the here and now, adolescents generally feel unconcerned about the long-term effects of substance use. Second, there are generally more pressing problems to deal with in the short term. However, adverse health effects do occur in the short term and can be experienced by adolescents. Harm-minimisation approaches need to be mindful of the risks being taken by adolescents on the basis of the type of substance/s used and the manner of use. For example, if using amphetamines, use via injection and regular uses of high doses place users at risk of a range of adverse effects. [15]

Readers with an interest in the pharmacology and toxicology of substances are referred to reference texts [3, 16], reports [17], and articles [18]. The approach that is considered relevant to this review of adolescent treatment is to highlight the main problems that are apparent with the misuse of substances by adolescents.

3.3.3 General health

Jackson, Registered Nurse with Dunsmore House (Adolescent Residential Drug and Alcohol

Assessment Unit) has written:

> A lot of the clients tend to be somewhat lacking in self care because of their lifestyle and this reflects in their general health. Sub standard nutrition, poor personal hygiene, erratic sleep patterns and lack of compliance with medication are just a few of the identifiable factors contributing to sub standard health among the clients. [19] (p. 10)

If left to continue, the substance misusing lifestyle is highly likely to have major detrimental effects on adolescents' health in later life. A study by Webster and colleagues conducted in Sydney compared the physical and mental health of methadone clients with university students (mean ages about 24 years). Physical health conditions that were significantly higher among the methadone clients than the comparison group included liver disease such as hepatitis, yellow jaundice, peptic or duodenal ulcer, high blood pressure, chronic bronchitis, emphysema, venereal disease, fainting spells, migraine, tension headaches, nervous breakdown, coughing sputum, haemoptysis, persistent changes in bowel habit, rectal bleeding, troublesome abdominal pain or indigestion, urinary frequency, dysuria, miscarriage, and irregular periods. Psychological and social perception were more impaired among the client group, as indicated by their significantly higher rates of often experiencing sleep difficulty, feeling unhappy or depressed, wishing they were dead, nervous, experiencing worrying thoughts that keep recurring, and not getting on well with other people.

Webster and colleagues noted that the poor health of the methadone clients was not so much the direct result of specific substances, but the result of years of a disordered lifestyle:

> Narcotic addiction leads to secondary medical morbidity and mortality, but health impairment also follows the gross disorder of living which has its roots in childhood, and early adolescent experience. [20] (p. 485)

In summary, the lifestyles of those who misuse substances tend to result in poor general health in the short term, and this can deteriorate in the longer term.

3.4 Suicide

Suicide behaviours include a range of behaviours such as suicidal ideas, suicide threats, suicide attempts, and successful suicide. [21] Suicide is the second leading cause of death in young people in New South Wales, with an annual death rate of 10.7 per 100,000. [22] Since 1964 the suicide rates for females of all ages, except adolescents, have fallen substantially, and rates for males over 30 have also decreased. However, between 1964 and 1990 the suicide rate per 100,000 adolescents aged 15 to 19 in Australia increased among males from 5.8 to 17.8 and among females from 2.9 to 5.0. [23] Suicide is even more evident among adolescents in rural areas [24] and unemployed adolescents [25].

Suicide is known to have multiple causes, including mental disorders, biological risk factors, familial risk factors, and situational factors. [26] Substance abuse has been found to play a major role in suicide behaviour [27] It has been found to be associated with greater frequency and repetitiveness of suicide attempts, more lethal attempts, more serious suicidal intent, and higher levels of suicidal ideation. [28] Putnins has argued that high rates of suicide attempts among adolescent substance abusers is (at least partly) a result of the disinhibiting effects of substances that can immediately increase impulsivity, as well as a possible increase in impulsivity created by long-term use of substances. [29] However, Kaminer's review of the literature on suicide among adolescents diagnosed as 'substance abusers or substance dependent' (SA-SD) found that psychopathology, rather than the substance misuse, was more likely to be the causal factor in suicidal behaviour among this group:

> Psychopathology in addition to the SA-SD , such as depression or conduct disorder and personality disorder, is frequently present. Precipitating events, such as an immediate loss of either an interpersonal or intrapersonal nature, are common. . . All of these may share a causal role, and the substances of abuse may serve only as a trigger. [21] (p. 27)

Whatever the causal chain, suicidal behaviour has been found to be common among adolescents with substance-related problems, although figures vary widely among studies, probably as a result of the various definitions of substance abuse/problems and sampling differences. [21] For example, suicide attempts have been reported by:

- 81% of females and 61% of males in a sample of homeless youth (aged 13 to more than 20, mean age = 17) in Sydney, most of whom were heavy substance users [30]

- 50% of adolescents in a short-term residential drug-treatment program for adolescents [19]
- 22% of young offenders in Juvenile Justice facilities in New South Wales [31] and 21% of young offenders in Juvenile Justice facilities in South Australia [29].

Hence, workers dealing with troubled adolescents need to be prepared that some of their clients might have suicidal thoughts and might even attempt suicide while under care. [32]

3.5 The human immunodeficiency virus (HIV)

Among the numerous public health concerns associated with injecting drug use, the risk of contracting the human immunodeficiency virus (HIV) has been of particular public concern. The acquired immune deficiency syndrome (AIDS) is a disease caused by HIV. AIDS is a fatal disease that causes the failure of the immune system and leaves the body unable to fight infections and certain malignancies. Given that there is no known cure, prevention is the only means of containing the disease. [33]

Infection with HIV can occur through a variety of means, including sexual contact with an infected person, injection of infected blood, and perinatally from an infected mother to her foetus. HIV-infected persons can remain symptom-free, thus ignorant of being infected and possibly transmit the virus, for months or years.

The prevalence of AIDS in Australia is lower than in the USA and in some European countries, similar to Canada, and higher than in the UK (Table 3.6). [34]

Table 3.6: AIDS cases reported to the World Health Organisation, June 1995.

Country	AIDS prevalence rate per 100,000
UK	2.4
Canada	3.8
Australia	4.5
France	8.5
Italy	8.9
Spain	14.2
USA	16.0

3.5.1 Illicit substance use as an HIV risk factor

To date, the majority of HIV/AIDS cases in Australia have occurred as a result of sexual transmission of HIV among homosexuals. Heterosexual injecting drug users represent only 4.1% of cases of HIV infection in Australia in 1994, with a further 5.0% being homosexual/bisexual injecting drug users. [35] However, the risk of HIV infection among injecting drug users has already been demonstrated overseas. In the USA, 32% of the AIDS cases reported to the Centers for Disease Control and Prevention (CDCP]) through June 1995, involved injecting drug use. [36] Considerable variation in HIV/AIDS prevalence among IDUs has been found within countries by geographic location and race [37, 38], as well as among countries. [39] The prevalence among IDUs has been found to be as high as 50% in areas of Scotland [40] and approximately 60% in New York city. [37]

Relative to non-illicit substance users, illicit substance users have a higher risk of HIV infection. [41-44] Risk is high in this group because a proportion of illicit substance users inject drugs and a proportion of these injectors share needles [45, 46]; they are more likely to be socialising with injectors, therefore at greater risk of becoming infected via sexual transmission

[47] and they are less concerned with taking precautions because they are greater sensation-seekers [48] and risk-takers [49] than same-age non-illicit substance users.

Using the analogy of other sexually transmissible diseases as an indication of risk of HIV infection by sexual transmission, injecting drug users in Australia have been found to have significantly higher rates of sexually transmitted diseases than non-injecting drug users. [20, 41]

To date, Australia has benefited from instigating effective strategies, such as education campaigns, needle-exchange services and methadone-maintenance programs, to prevent the spread of HIV by needle-sharing. [50] However, Wodak has warned that the potential for an HIV/AIDS epidemic among injecting drug users is still a reality that needs ongoing attention:

> The prevalence of hepatitis B and C among Australian IDUs is comparable to rates reported in other countries and indicates the potential for spread of HIV in this population over time. . . Complacency, familiarity, and loss of interest are now the major impediments to consideration of additional policies for the prevention of HIV infection among IDUs. [51] (p. 17)

3.5.2 Intoxication as an HIV risk factor

The use of alcohol and other substances has been found to be related to sexual risk-taking. [52] Intoxication itself can lead to a decrease in condom use, [53] and Hochhauser has noted that adolescents tend to use alcohol and other substances to reduce sexual anxiety. [54] However, the degree to which this relationship is because of intoxication at the time of sexual activity or to the result of shared aetiologies is not known. [55]

3.5.3 Adolescence as an HIV risk factor

Given that a) 20% of AIDS cases and 15% of AIDS deaths occurred in people aged under the age of 29 from the beginning of the AIDS epidemic, about 1985, to 30 September 1992 [56] and b) AIDS has a long incubation period, it is likely that many AIDS patients contracted HIV as teenagers. [57] Adolescents are at additional risk of contracting HIV relative to older people for numerous reasons:

a) Adolescents have greater difficulty in negotiating safe sex than adults. [58-60] After reviewing the literature on adolescent sexuality in the context of HIV/AIDS, Brooks-Gunn and Furstenberg summarised the particular problems that are inherent in negotiating safe sex among adolescents:

> Adolescents face a set of particular challenges that make contraceptive use difficult; they may have vastly different constructions of sexuality than do adults and different male/female sexual negotiation patterns. Some of the characteristics (e.g., low personal efficacy, high sensation seeking, susceptibility to peer pressure, low knowledge, and sense of invulnerability) shown to make the practice of safer sex more difficult among adults engaging in high-risk behaviors are more typical - perhaps normative - among adolescents. [59] (p. 77)

Added to these difficulties is the possibility of a power imbalance. For example, if a young person is having sex (paid or unpaid) with an older person, or has less sexual experience than the sexual partner (heterosexual or homosexual), then that person is likely to feel less able to assert the need for safe sex.

b) Adolescents tend to be experimenting with their sexual relationships and they are less likely to be in stable relationships than adults. [61] This situation encourages unsafe sex on a number of grounds. For example, adolescents tend to not use any contraceptives, let alone condoms, during their first twelve months of sexual activity. Plus, the greater the number of sexual partners, the greater the chance of HIV infection. In addition, opportunistic sex is less likely to be anticipated than regular sex with a known partner, so condoms are less likely to be at hand.

c) Adolescents have more problems obtaining, and being in possession of condoms than adults because of the fear of being caught by parents or by persons who could tell their parents about the purchase, or possession, of condoms. [62]

d) Adolescents tend to be greater risk-takers and experimenters than adults. [63, 64] Furthermore, they are more likely to feel invulnerable and less likely to feel concerned about the future. [64-67] Among some adolescents, there appears to be a belief system that exacerbates this tendency:

In general, young people who engage in high-risk behaviour perceive greater support for their risk taking behaviour from friends and perceive less risk from engaging in destructive behaviours. [49] (p. 29)

e) The concrete thinking that is typical of adolescents can discourage understanding that people with HIV are not always from common stereotypes: 'junky, fag and pro' and not always visibly symptomatic. [68] In fact a Canberra study found a tendency for some young people to distance themselves from HIV/AIDS, feeling that it happens to others to which they indicated hostility, homophobia, bigotry and/or punitiveness. [69] Stereotyping others has been seen as an ego-defensive distancing mechanism. [70]

Evidence for adolescence as a risk factor for HIV infection has been provided by studies of risk behaviours among injecting drug users. Age was the only predictor of risky sexual behaviour found by a Sydney survey of injecting drug users, with younger subjects engaging in more risk-taking behaviour than older subjects. [46, 71] A comparison of under 23-year-old injecting with older injecting drug users in Perth found that the younger injectors used more stimulants and hallucinogens and fewer opiates and benzodiazepines, were more likely to inject all or most of their drugs, less likely to have been in treatment, had more sex partners, were less likely to have changed their substance-using behaviour because of AIDS, less likely to use alone, shared needles less frequently (although a majority shared at least some of the time), had less knowledge of HIV/AIDS, and were more pessimistic about the outcome of HIV infection. [72] The authors concluded that most of these behaviours placed young injectors at greater risk of HIV infection than the older injectors. The low contact with treatment services for education was seen as contributing to their failure to realise the riskiness of their behaviour.

3.5.4 Young illicit substance users as a means of transmission of the HIV virus to low risk populations

Concern about HIV infection in young, illicit substance users, has been exacerbated by the risk of dissemination of infection by sexual transmission to low risk populations. [42, 43] In the USA, more than half of heterosexual males and females with no other risk factors for HIV reported that they had been infected through sexual contact with injecting drug users. Evidence for this concern is provided by a study of the risk behaviour of 303 injecting drug users in England. [44] The majority primarily used heroin and 60% were still in drug treatment. The study found a combination of behaviours and attitudes that represented significant risk of transmission of HIV infection to non-substance-using partners of injecting drug users for whom sexual contact was the only risk factor. For example, there was a preference among the males for non-substance-using female partners, one-third of those respondents with non-substance-using partners and nearly half of the respondents with non-injecting partners had used others' injecting equipment in the previous six months and 85% of those respondents reported that they did not use condoms. Despite numerous such high risk behaviours, the sample reported unrealistic optimism about their personal vulnerability to HIV infection. The risk of transmission of HIV to the non-drug injecting population is a significant cause for concern.

3.5.5 HIV/AIDS awareness and HIV risk behaviours

Previous research has indicated that knowledge about HIV/AIDS in the general population and among adolescents is generally good, but incomplete, and subject to misconception or convenient distortion. [73, 74] Even high risk groups feel that there is little risk that they can be infected by the HIV. Spooner and colleagues' interviewed illicit substance users aged 16 to 21 in Sydney. Among the participants who injected drugs, 22% of those who shared needles and 42% of those who reportedly did not share needles felt that they had no chance, or very little chance, of becoming infected by the HIV. [75] Similarly, a study of 187 injecting drug users in Stockport, England, most of whom were not regular users of health centres, and a quarter of whom were aged under 20, found that most perceived themselves to be at low, or no, risk of HIV infection. [76]

Even among those who know about the risk of HIV infection from sharing needles and syringes and who wish to use these safely, there a number of impediments to safe injecting.

Loxley and Davidson conducted focus groups to investigate the barriers to safe injecting among injecting drug users in Perth. [77] Obstacles that were identified by this research included the availability and the cost of needles and syringes, problems with pharmacists' attitudes towards injecting drug users, the fear of being identified as an injecting drug user by police, apathy ('couldn't be bothered'), interference with pleasure, lack of power in a situation and in social relationships. Spooner and colleagues also identified police harassment as a significant barrier to being prepared to injecting safely, particularly in rural areas. [78] Such barriers to safe use corresponds with research into the risk-taking behaviours of injecting drug users that has found that, while access to clean needles and syringes is a factor in whether or not they are shared, it is not sufficient to prevent sharing. [45]

There has been some evidence that injecting drug users have been amenable to changing their behaviour to reduce their risk of HIV infection, particularly about their substance use, if not so much their sexual behaviour. [79] Abdul-Quader and colleagues [80] cite a number of studies that have documented some form of risk reduction by approximately 60% of injectors. These changes included stopping, or reducing, injecting drug use and cleaning needles and syringes more effectively or more often. Sexual risk-reduction, on the other hand, has been reported in only 5% to 31% of injectors. Unfortunately, Des Jarlais and colleagues have also found that 36% of those who had initiated risk reduction did not fully maintain that reduction. These authors concluded that initiation and maintenance of HIV risk-reduction behaviours are separate and complex processes, requiring long-term, rather than 'quick fix', solutions.

In summary, the prevalence of HIV infection among injecting drug users is currently low in Australia. However, sharing needles and syringes is a risk factor that has caused instances of high rates of infection among a number of overseas drug-injecting communities. Furthermore, young injectors have been found to practise safe sharing only episodically, and then, only when convenient. In addition to numerous environmental and social obstacles to safe-injecting behaviours, myths about being able to tell if someone has HIV have been major barriers to the adoption of safe-injecting and safe-sex practices. Consequently, substantial concern about the risk of an epidemic of HIV among young illicit substance users exists within the public health field and services need to be aware of the need to promote safe sex and safe substance use among adolescent clients.

3.6 Other blood-borne viral infections

With the considerable concern about HIV other blood-borne viral infections had been relatively neglected until the 1990s. Of particular concern has been the transmission of the various forms of hepatitis. The hepatitis C virus (HCV), for example, has serious, and potentially fatal, long-term health effects in about one-quarter of those infected and treatment options are limited to Interferon that is effective in less than 25% of cases, and liver transplant for advanced cases. [81] A survey of 234 injecting drug users aged 12 to 20 found that:

> Eighty percent of respondents who took part in this study were at risk of HCV (hepatitis C virus) infection from unsafe injecting practices and relevant knowledge of HCV among the study group was at best, barely adequate. [82] (p. ii)

From the estimates below, hepatitis is clearly more prevalent and more virulent than HIV. [83-86]

Number of Australians currently infected:	Hepatitis B	150,000
	Hepatitis C	100,000
	HIV	17,000
Estimated number of infections resulting from injecting drug use per year:	Hepatitis C	10,000
Estimated number of infections resulting from <u>all</u> causes per		

year:	HIV	600[13]
The annual incidence of infections among Australian IDUs:	Hepatitis B	1.0%
	Hepatitis C	13.3%
	HIV	0.4%

HIV infection control has been relatively successful because a) action was taken quickly, before the population was infected and b) HIV is relatively less infectious than Hepatitis B or Hepatitis C [51]. Consequently, much greater effort is required to control the epidemic of Hepatitis C (and possibly Hepatitis B) among IDUs. [84] Wodak and Crofts sum up the situation:

> HIV infection among IDUs in Australia appears to be under reasonable control at present. In contrast, the high incidence and prevalence of hepatitis C among Australian IDUs is unacceptable. Although the morbidity and mortality of HIV is greater than that of hepatitis B and hepatitis C, the far larger number of Australians currently infected and becoming infected with hepatitis C suggests that the long term health, social and economic consequences of hepatitis C infection may be comparable with the adverse consequences of HIV infections. Most cases of hepatitis C infection now occurring in Australia result from sharing of injection equipment [51] (p. 17)

Already, a small pool of HCV infection has been found among young drug injectors, suggesting the need to act quickly to prevent a new epidemic among adolescents. [87]

3.7 Injuries

Another health risk with the use of illicit substances by adolescents is related to injuries. Particular types of injury of concern with adolescent substance abusers are substance-related violence [88, 89] and road accidents [90]. While data on substance-related injuries tends to be incomplete, there is substantial evidence that substance use, particularly alcohol use, is a major contributer to violence and to road accidents. For example, approximately 30% of drivers killed via crashes on Australian and overseas roads have a blood alcohol content over 0.05%. [91]

3.8 Reactions to street chemistry

Rarely cited, but a potentially devastating consequence of illicit substance use, is the consequences of using substances that have been manufactured illegally. This issue is not adolescent-specific, however, it is mentioned because it is relevant to adolescents. As reviewed by Chesher, new 'designer drugs' have not been subjected to rigorous evaluative tests to ensure that they are safe for human consumption. [92] Even those substances that have been found to be safe in low, controlled doses, such as heroin and amphetamines, can be unsafe to use because of the illicit nature of their manufacture and distribution. Firstly, attempts by legal authorities to restrict the production of illicit substances have included bans on the availability of substances that are required to manufacture those substances. To overcome these bans, other less safe substances have been substituted [93]. For example, acute lead intoxication has been reported following the use of amphetamines that were manufactured with lead acetate [94]. Second, illicit chemists do not necessarily have the skill, nor the apparatus, to produce a quality-controlled product. Finally, as the substance moves along the chain from manufacturer to street-seller, it is generally cut with adulterants that can be more dangerous than the illicit substance itself. In sum, the quality of illicit substances is not controlled, so a single use of an untested, incorrectly manufactured or adulterated, substance could be have serious adverse consequences. Chesher has provided a number of examples of deaths and severe adverse reactions resulting from the use of new, untested 'designer drugs' that were created by 'street chemists'. For example:

> In 1981 in Santa Clara County in California, a 'street' chemist set out to produce a derivative of the scheduled opioid, pethidine, and decided to make MPPP (4-propuloxy-4-phenly-N-methylpiperidine). This analogue would achieve two aims - to produce an active opioid with a higher potency than pethidine, and to produce a compound which would escape the law.

[13] Most of these are attributable to male-to-male sexual contact.

> Owing, it is said, to impatience, the chemist hurried along the synthesis by increasing the temperatures and shortening the reaction times, and produced a batch with an undesirable side product, 1-methyul-4-phenly-1,2,3,6-tetrahydropyridine (MPTP), as it was found later, is toxic to dopaminergic neurones and produces, quite rapidly, the full clinical syndrome of Parkinson's disease. [92] (p. 158)

Chiang and Goldfrank also discussed the effects of additives such as quinine, strychnine, talc, starch, lignocaine, lactose, and other sugars:

> These foreign particles in the blood stream can damage the heart valves directly, thus increasing the risk of bacterial seeding of the valves. These agents also cause granulomatous formation in other organs such as the lung, the kidney, the skin and the blood vessels. Significant amounts of quinine can cause cinchonism and amblyopia, strychnine can cause opisthotonos and life-threatening seizures. [95] (p. 83)

While a rare occurrence, the use of illicit chemical compounds can have serious health consequences, even when used only once. The frequent user of illicit substances adds to that risk with every occasion of use.

3.9 Mental health

While psychological distress (for example, low self-esteem and depression) have not been found to be causally related to substance abuse, these conditions are often evident within populations of substance abusers. The issue of dual diagnosis is discussed elsewhere in this report. However, it is worth noting that symptoms of emotional distress that do not meet DSM-IV criteria for mental disorders are prevalent and still need to be addressed by treatment agencies. For example, increasing substance use has been associated with an increase in depression, a decrease in self-esteem, and a deterioration of purpose in life among high school students [96]; a study of adolescent substance abusers in treatment have found evidence of mild to moderate depression among the sample. [97]

3.10 Maturational lag

Adolescence is a time of cognitive and emotional maturation. [98] However, when much of the time is spent under the influence of substances, cognitive development is often hindered or distorted. Adolescents with a history of significant substance use might act and feel grown up as a result of their 'independent' substance-using lifestyle. [99, 100] On the basis of results from a longitudinal study of youth, Bentler has concluded that:

> Heavy drug use as a teenager in turn further interferes with the mastery of critical developmental tasks, such as formation of a prosocial identity, gaining interpersonal and educational skills, and learning to take on family and work role responsibilities. It also fosters precocious development, i.e., it accelerates development by leading to premature adoption of adult roles of jobs and family, without the necessary growth and development typically needed to ensure success with these roles. Thus drug users may develop a pseudomaturity that does not adequately prepare them for the real difficulties of adult life. [101] (p. 57)

Miller has also has discussed how adolescents who have been heavily involved in substance use can have an inflated sense of their maturity. On the basis of experience with working with adolescents in a drug-treatment agency, Miller discusses this issue: [102]

> Clinicians working with adolescent drug abusers regularly witness an expression of a pseudo-maturity by the client. The adolescent boasts a streetwise confidence, being able to handle themselves in any situation, a rule-breaker who answers to nobody. In reality the client is highly conformist and limits their own experience. They are not true risk-takers despite their hazardous lifestyle. These adolescents are not willing to explore new roles and experiences in search of a personal identity but live vicariously by relating the dramas of streetlife and deviant youth mythology. 'Street images', fantasy and personal fables replace finding answers to the question: Who am I. (p .9)

This delay in the maturation process means that adolescents who have used substances in a maladaptive manner might be unable to reason like a same-age peer, so workers are often frustrated by an adolescent's apparent inability to 'act their age'. As Greenberg stated:

> . . .these children, who although chronologically teenagers, must be coaxed into adolescence. The may need time to play. . . staff must be sensitive to immature acting out as a natural working through of the transition from child to adult. [103] (p. 104)

There are numerous service implications of the maturational lag. Firstly, services need to be aware of the developmental level of adolescent clients and how this might differ to the developmental level of other same-age peers, as well as to the clients' own perceptions of how grown up they are. Second, adolescent clients might need to be allowed to be children, for example, to play without feeling foolish. Third, adolescent clients might need assistance with developmental tasks so that they can catch up with other adolescents. This can involve

numerous activities such as vocational assistance, intrapersonal and interpersonal skills training, and support with taking on responsibilities. Finally, staff members of services need to be patient: adolescent clients do not grow up overnight.

3.11 Crime

Substance absuse and involvement in criminal activities often co-exist. US research has found that substance abuse has contributed to crimes such as murder, [104] robbery, [105] and serious delinquent acts [106]. The type of crime can vary with the main substance of choice. [107] Alcohol use has been associated with crimes of violence both outside [108] and inside [109] the home and with serious youth crime [106]. Prostitution is major source of income for some adolescents with substance use problems, particularly injecting drug users. [68, 110, 111] An Australian study of juvenile offenders in detention found that 'illicit drug use and the income need it generates appear to be crucial determinants of offending frequency for both BandT (break and enters) and MVT (motor vehicle theft).' [112] (p. 45)

Studies of the relationship between substance misuse and crime have resulted in contradictory findings. [113] The relationship could be a) because they share common antecedents [114], b) because substance use leads to serious crime [115] c) because crime causes substance use d) because of some form of reciprocal relationship, or e) because of some form of spurious relationship [116]. On the basis of qualitative research, Faupel and Klockars have proposed that the substances-crime connection changes throughout the career of an 'addict', so any simple cause-effect scheme fails to capture the complexity of the issue. [117] Whatever the relationship, treatment programs need to acknowledge that recidivism is common and both problems are often an issue for their adolescent clients. Moreover, communication between the treatment system and the JJ system can be essential for continuity of treatment.

Hawkins and colleagues reviewed treatment approaches applicable for adolescents with concurrent serious delinquency and substance-use problems and recommended the following interventions: [118]

- Cognitive behavioural interventions: Such adolescents tend to lack skills in impulse control, anger management, problem solving, time management, assertiveness, and coping with anxiety or stress. Programs that train these adolescents to assume personal responsibility for their behaviours and to develop practical living skills have been found to be promising.
- Environmental support: After-care is recommended to enable adolescents who leave residential treatment or control centres to maintain any benefits gained during treatment. Case managers who see the adolescents before and after departure from the centre, organise community resources to support the adolescents and conduct home visits and family meetings can assist re-integration into society and maintain behaviours learnt in the residential treatment/control setting.

Reviews of the literature on the reduction of recidivism by young offenders also support cognitive behavioural interventions, and add the following recommendations: [119, 120]

- more structured and focused treatment (for example, behavioural, skills-oriented) and multi-modal treatments are more effective than less structured and focused counselling approaches
- community-based programs are more effective than residential programs, unless those residential programs are structurally linked with community-based interventions and services
- motivational interviewing could assist in encouraging young offenders to contemplate their predicament and then perhaps engage in rehabilitation [31]
- programs that improve family functioning and modify delinquents' social networks are promising. Multisystemic therapy (MST) [121], for example, has been found to be efficacious with serious juvenile offenders. [122] Multisystemic therapy is described as follows:

> Using interventions that are present-focused and action-oriented, MST directly addresses intrapersonal

> (for example, cognitive) and systemic (i.e. family, peer, school) factors that are known to be associated with adolescent antisocial behavior. Moreover, because different combinations of these factors are relevant for different adolescents, MST interventions are individualized and highly flexible. [122] (p. 571)

These recommendations for reducing delinquency are consistent with recommendations for reducing substance abuse, detailed later in this report. Such concurrence is consistent with the notion of delinquency and substance abuse being part of a problem-behaviour syndrome. [123, 124]

3.12 Effect on the family

Discussions about the family in relation to adolescent substance abuse typically only mention how family dysfunction contributes to substance abuse. However, what is generally overlooked is the fact that families also suffer as a result of substance misuse by an adolescent, in terms of both physical and mental health. [125]

As such, families could need emotional support. Support can take many forms such as counselling and support groups. Daroff, Marks and Friedman have discussed how parents have formed organisations that provide mutual support, as well as take political and community action to address problems at a broader level than the family level [126] Service providers can be involved in support groups for parents, acting as a catalyst and, if necessary, providing a meeting point.

Furthermore, Daroff and colleagues discuss how parents, confronted by the knowledge that their child is abusing substances, often first try to deny the problem, then feel guilt and shame that it must be their fault and often respond inappropriately, thus worsening the problem. [126] Parents often do not understand why their child is misusing alcohol and other substances. Inappropriate responses include arguments, punishments, rejection and/or blaming somebody else for the problem. So, advice, information, and skills-training can also be helpful for parents, not just to help the adolescents, but to reduce parents' feelings of helplessness, frustration, and resentment. There are many self-help books for parents that give advice, generally relating to communication skills, such as the following:

> In a straightforward way, tell your child about your concern and the reasons for it: taking drugs is harmful to one's physical, mental and social well-being. Tell your child that you are opposed to any drug use and you intend to enforce that position. WHAT YOU SHOULD TRY TO BE IS: Understanding ('I realize you're under a lot of pressure from friends to use drugs.'); Firm (As your parent I cannot allow you to engage in harmful activities.'); Self-examining ('Are my own alcohol and drug consumption habits exerting a bad influence on my child?'). WHAT YOU SHOULD NOT BE IS: Sarcastic (Don't think I don't know what you're doing.'); Accusatory ('You're lying to me.'); Stigmatizing ('You're a terrible person.'); Sympathy-seeking ('Don't you see how much you're hurting me?'); Self-blaming ('It's all my fault.'). Such statements tend to make the child defensive and likely to tune you out. [127]

Also, understanding the facts about substance use can be helpful. As discussed by Daroff and colleagues, adolescents pay more attention to parents if what they say is accurate, and informative, it can even counter some of the fallacies perpetuated by peers. [126] Hence, there is a role for providing parents with accurate information about substance types and substance effects.

In summary, an adolescent substance abuser in the family can be stressful for other family members (parents and siblings). These family members could need support for their own emotional needs, as well as information and skills-training to assist them to respond appropriately to the adolescent's situation.

3.13 Effect on education

While failure in the school system has been identified as a predictor of substance abuse[14], it is also a consequence of substance abuse. That is, once adolescents are abusing substances, they are highly likely to do poorly in school, [128] drop out of school early, and experience job instability. [100] Intake data from an adolescent drug-treatment facility in Sydney revealed that 72% of clients (aged 12 to 20) did not complete Year 10. [19]

Hall and colleagues reviewed the literature on the health and psychological

[14] See Chapter 2 in this report.

consequences of cannabis use and cautioned that cross-sectional studies tend to exaggerate the adverse effects of cannabis use on educational performance because students with lower educational aspirations or abilities are more likely to use cannabis (see review of causes of substance use above). [129] However, even after controlling for initial educational performance, there appears to be a modest impact of cannabis and other illicit substance use on later school performance.

3.14 Effect on employment

Just as substance abuse can affect educational performance, substance abuse can also affect occupational performance. [100, 130] In an investigation of problems created by substance use among young offenders on parole, Alder and Read presented a vivid account of how heavy involvement in substance use can interfere with the ability of adolescents to obtain and maintain employment. [131] In the words of one of the parole officers:

> It virtually involves a choice of 'I'm going to get off drugs and work, or I'm going to stay on drugs and not work'. And we've had kids who've tried to do both, and it doesn't work. (p. 24)

Furthermore, unemployment as a result of substance use, combined with a lack of access to money can contribute to the drug crime connection:

> Drug usage creates some side effects in terms of re-integration. People we have at the moment who are heavily using marijuana for example, are not motivated to work; they are sleeping in the morning; they arrive at the unit stoned so we have to say nick off, they have trouble complying with conditions attached to group programs; they have trouble motivating themselves to work, they have trouble maintaining work; there is a need for more money than other people have and if they're not employed they have to find other ways of obtaining that money, and that can be by doing crimes or by selling drugs. (p. 29)

In summary, educational achievement (numeracy and literacy) and vocational training and employment are adversely affected by over-involvement in substance use and programs need to help young clients to deal with these deficits (as discussed in Chapter 2 of this report).

3.15 Adolescent perception of 'problem'

The above review has presented the major problems demonstrated via research associated with the misuse of substances by adolescents. But what do adolescents themselves consider to be a problem and when do they think they have a problem?

Spooner and colleagues asked 16 to 21-year-old illicit substance users[15] whether they thought that their use of each of the substances they were using was a problem. [75] Overall, 21% of the sample thought that their use of one or more of the substances they were using was a problem. When asked why they thought it was a problem, the main responses were that they were taking too much, using too often, or having problems with addiction. Other responses were rarely given.

Focus group discussions, conducted as part of the same study, indicated that some adolescents were taking substances at a frequency that was quite likely to be affecting their ability to function productively in society, but that this was not viewed as a problem. Rather, the participants' definition of a problem was (as found in the survey) that dependency was so great that they could not stop using:

> Yeah I can control by drug use - I've been straight for six days now. Before that I was full time off my face for about five weeks. . . I'm just giving my body a break 'cause I felt so awful. I'm going out on Saturday night and I'll start using again then. It's nice to know that I can stop when I want to. (p. 50)

Clearly, this sample of youths had a very different (and narrow) notion of substance-related problems relative to the discussion of problems presented above.

Bungey and Faulkner asked a slightly different question of their respondents: whether their use of substances or their use of substances in combination with alcohol had created problems for them in the previous twelve months. This question prompted the respondents to

[15] To participate in the study, participants had to have used an illicit substance other than, or in addition to, cannabis, in the previous three months.

report numerous problems: financial problems, arguments, fights, legal problems including driving offences and getting arrested, losing friends, losing a job, working less, problems with physical health, problems with emotional health, and overdose.

It appears that adolescents can identify specific problems about substance use, but do not necessarily consider that their substance use is a problem. These findings are consistent with international research. For example, Morrison and Plant asked substance users in Edinburgh about substance-related adverse consequences and noted that a) some individuals did not experience, or did not acknowledge, adverse consequences to substance use and b) adverse consequences did not necessarily lead to contact being made with a drug agency. [132] Clearly some efforts need to be made to increase adolescent substance abusers' awareness of the problems associated with their substance abuse, before they will contemplate changing that behaviour.

3.16 Summary

By definition, substance abuse is associated with adverse consequences. From the review above it is clear that these adverse consequences are multifarious and impact upon numerous domains of adolescents lives, including their own health and welfare, as well as impacting upon the lives of their families, and on the community. In fact, it has been asserted that the concomitant problems of adolescents entering treatment have increased, making it harder for treatment professionals to be effective:

> These problems tax their patience and test the very limits of their experience, and indeed, their confidence. Professionals who work with adolescents have had to deal with increasing threats of violence, threats of suicide, a growing number of cases involving self-inflicted wounds and mutilation, the phenomena of cult and gang membership, and other issues that were much less common even five years ago. [133] (p. 322)

Treatment programs working with adolescents need to plan their interventions with consideration for what damage has already been done by their client's substance use and train their staff to be able to deal with the various problems that are likely to arise. The need to deal with the various problems resulting from substance use is required not just for humanitarian reasons, but to assist client outcomes. In his review of services needed for adolescents with substance related problems, Brown stated that substance use should not be seen as the central issue and targeting this alone while ignoring issues such as homelessness, unemployment, and alienation from the family and society, is both ineffective and inappropriate.

> . . . illicit drug use may be for some the predominant concern, but it should not be seen or treated as the central, or solitary, issue. Illicit drug use is neither the ultimate nor immediate cause of most of the distresses among young people encountered by the welfare system; nor has it proven effective to mark drug use as the sole target for intervention in the lives of such young people, since at the same time they are often beset by problems of homelessness, hunger, unemployment, limited social and recreational opportunities, and by estrangement from their families, school, and other facets of conventional society. [134] (p. IV)

Friedman and Glickman's study of the program characteristics for successful treatment of adolescent substance abuse support Brown's assertion. [135] Friedman and Glickman found that the provision of 'special services (vocational counselling, and school services, etc) accounted for more variance in treatment outcome than did either the types of psychotherapy provided or the size of the program'. (p. 678).

3.17 References

1. Czechowicz, D. (1991) Adolescent alcohol and drug addiction and its consequences: an overview, in: Miller, N. (Ed.) *Comprehensive Handbook of Drug and Alcohol Addiction*, pp. 205-10 (New York, Marcel Dekker Inc).
2. Chesher, G. B. (1991) Hazardous amphetamine use: the need to consider dosage, *Drug and Alcohol Review*, 10, pp. 299-303.
3. Cox, T., Jacobs, M., Leblanc, A. & Marshman, J. (1983) *Drugs and drug abuse: a reference text* (Toronto, Canada, Addiction Research Foundation).
4. Beck, J. (1986) MDMA: The popularization and resultant implications of a recently controlled psychoactive substance, *Contemporary Drug Problems*, Spring, pp. 23-63.

5. Solowij, N., Hall, W. & Lee, N. (1992) Recreational MDMA use in Sydney: a profile of 'ecstasy' users and their experiences with the drug, *British Journal of Addiction*, 87, pp. 1161-72.
6. Anthony, J. C. & Petronis, K. R. (1989) Cocaine and heroin dependence compared: evidence from an epidemiologic field survey, *American Journal of Public Health*, 79, pp. 1409-10.
7. Trinkoff, A. M., Ritter, C. & Anthony, J. C. (1990) The prevalence and self-reported consequences of cocaine use: an exploratory and descriptive analysis, *Drug and Alcohol Dependence*, 26, pp. 217-25.
8. Boon, N. A. (1987) Solvent abuse and the heart, *British Medical Journal*, 294, pp. 722.
9. English, D. & D'Arcy, C. (1995) *The quantification of drug caused morbidity and mortality in Australia 1995* (Canberra, Australian Government Publishing Service).
10. Zador, D., Sunjic, S. & Darke, S. (1996) Heroin-related deaths in New South Wales, 1992: toxicological findings and circumstances, *Medical Journal of Australia*, 164, pp. 204-7.
11. Darke, S., Ross, J. & Hall, W. (1996) Overdose among heroin users in Sydney, Australia: I. Prevalence and correlates of non-fatal overdose, *Addiction*, 91, pp. 405-11.
12. Sullivan, L. (1994) Interpreting our drug mortality statistics: holes in the data on illegal drugs, *Medical Journal of Australia*, 161, pp. 569-70.
13. Holmberg, M. (1985) Longitudinal studies of drug abuse in a fifteen-year-old population 2. Antecedents and consequences, *Acta Psychiatrica Scandinavica*, 71, pp. 80-91.
14. Commonwealth Department of Health, H., Local Government and Community Services, (1993) *Handbook for medical practitioners and other health care workers on alcohol and other drug problems* (Canberra, Australian Government Publishers).
15. Hall, W. & Hando, J. (1994) Route of administration and adverse effects of amphetamine use among young adults in Sydney, Australia, *Drug and Alcohol Review*, 13, pp. 277-84.
16. Blum, K. (1984) *Handbook of abusable drugs* (New York, Gardener Press).
17. Cohen, S. (1985) Adolescents and drug abuse: biomedical consequences, in: Goldstein, A., Jaffe, J., Jones, R. *et al.* (Eds.) *Drug abuse and the American adolescent. NIDA Research Monograph No. 38*, pp. 104-112 (Rockville, MD, US Department of Health and Human Services).
18. Arria, A. M., Tarter, R. E. & Van Thiel, D. H. (1991) The effects of alcohol abuse on the health of adolescents, *Alcohol Health and Research World*, 15, pp. 52-7.
19. Connie, P. & Miller, R. (1994) Dunsmore House fifth annual report, pp. 10 (Rooty Hill, New South Wales, Dunsmore House).
20. Webster, I. W., Waddy, N., Jenkins, L. V. & Lai, L. Y. C. (1977) Health status of a group of narcotic addicts in a methadone treatment programme, *Medical Journal of Australia*, 2, pp. 485-91.
21. Kaminer, Y. (1992) Psychoactive substance abuse and dependence as a risk factor in adolescent attempted and completed suicided: a review, *American Journal on Addictions*, 1, pp. 21-9.
22. Policy and Planning Division (1994) *New South Wales youth health plan* (Sydney, New South Wales Department of Health).
23. Hassan, R. (1996) *Social factors in suicide in Australia* (Canberra, Australian Institute of Criminology).
24. Dudley, M., Waters, B., Kelk, N. & Howard, J. (1992) Youth suicide in New South Wales: urban-rural trends, *Medical Journal of Australia*, 156, pp. 83-8.
25. Morrell, S., Taylor, R., Quine, S. & Kerr, C. (1993) Suicide and unemployment in Australia 1907-1990, *Social Science and Medicine*, 36, pp. 749-56.
26. Moscicki, E. (1995) Suicide in childhood and adolescence, in: Verhulst, F. & Koot, H. (Eds.) *The epidemiology of child and adolescent psychopathology*, pp. 291-308 (Oxford, Oxford University Press).
27. Bukstein, O., Brent, D., Perper, J. *et al.* (1993) Risk factors for completed suicide among

adolescents with a lifetime history of substance abuse: a case-control study, *Acta Psychiatrica Scandinavica*, 88, pp. 403-408.
28. Crumley, F. (1990) Substance abuse and adolescent suicidal behaviour, *Journal of the American Medical Association*, 262, pp. 3051-6.
29. Putnins, A. (1995) Recent drug use and suicidal behaviour among young offenders, *Drug and Alcohol Review*, 14, pp. 151-8.
30. Howard, J. (1991) Dulling the pain: two surveys of Sydney street youth, Paper presented at the *Ninth National Behavioural Medicine Conference*, Sydney.
31. Zibert, E., Hando, J. & Howard, J. (1994) *Patterns of drug use and indicators of harm among persons detained in New South Wales Juvenile Justice centres 1993* (Sydney, Department of Juvenile Justice).
32. Maas, K. & Ney, D. (1992) Suicide in residential care: implications for child care staff, *Journal of Child and Youth Care*, 7, pp. 45-57.
33. American Public Health Association (1989) *Special initiative on AIDS. Illicit drug use and HIV infection* (Washington DC, American Public Health Association).
34. World Health Organisation (1995) AIDS cases reported to WHO by country/area (Geneva, World Health Organisation).
35. Kaldor, J. (1995) Australian HIV surveillance report (Sydney, National Centre in HIV Epidemiology and Clinical Research).
36. Centers for Disease Control and Prevention (1995) HIV/AIDS surveillance report (Atlanta, Centers for Disease Control and Prevention).
37. Haverkos, H. W. (1989) AIDS update: Prevalence, prevention and medical management, *Journal of Psychoactive Drugs*, 21, pp. 365-70.
38. Aggleton, P. & Capila, M. (1992) Young people, HIV/AIDS and the promotion of sexual health, *Health Promotion International*, 7, pp. 45-51.
39. Bourne, P. G. (1988) AIDS and drug use: an international perspective, *Journal of Psychoactive Drugs*, 20, pp. 17-21.
40. Robertson, J. R., Bucknall, A. B. V., Welsby, P. D. *et al.* (1986) Epidemic of AIDS-related virus (HTLV-III/LAV) among intravenous drug users, *British Medical Journal*, 292, pp. 527-9.
41. Ross, M. W., Gold, J., Wodak, A. & Miller, M. (1991) Sexually transmissible diseases in injecting drug users, *Genitourin Medicine*, 67, pp. 32-6.
42. Newmeyer, J. A. (1988) The intravenous drug user and secondary spread of AIDS, *Journal of Psychoactive Drugs*, 20, pp. 169-72.
43. Marmor, M., Kransinski, K. & Sanchez, M. (1990) Sex, drugs and HIV infection in a New York hospital outpatient population, *Journal of Acquired Immunodeficiency Syndrome*, 3, pp. 307-18.
44. Klee, H., Faugier, J., Hayes, C., Boulton, T. & Morris, J. (1990) Sexual partners of injecting drug users: the risk of HIV infection, *British Journal of Addiction*, 85, pp. 413-8.
45. Miller, M., Ross, M., Wodak, A. & Gold, J. (1990) Risk taking in injecting drug users in Sydney, *National AIDS Bulletin*, Nov, pp. 12-6.
46. Darke, S., Hall, W. & Carless, J. (1990) Drug use, injecting practices and sexual behaviour of opioid users in Sydney, Australia, *British Journal of Addiction*, 85, pp. 1603-9.
47. Friedman, S. R., Des Jarlais, D. C. & Sterk, C. E. (1990) AIDS and the social relations of intravenous drug users, *Milbank Quarterly*, 68, pp. 59-84.
48. Pedersen, W., Clausen, S. E. & Lavik, N. J. (1989) Patterns of drug use and sensation-seeking among adolescents in Norway, *Acta Psychiatria Scandinavica*, 79, pp. 386-90.
49. Stevenson, H., Slovic, P., Hampson, S. & Schrader, L. (1990) Adolescent risk perception: a measure to further our understanding of tobacco and drug use, *Hygiene*, 9, pp. 27-9.
50. Wodak, A. (1991) Australia: Preventing HIV spread among injecting drug users, *Lancet*, 337, pp. 482.

51. Wodak, A. & Crofts, N. (1994) Background paper to Public Health Association policy on improved control of hepatitis B and hepatitis C infection associated with injecting drug use, *In Touch*, 11, pp. 16-7.
52. Parker, D., Harford, T. & Rosenstock, I. (1994) Alcohol, other drugs, and sexual risk-taking among young adults, *Journal of Substance Abuse*, 6, pp. 87-93.
53. Strunin, L. & Hingson, R. (1992) Alcohol, drugs and adolescent sexual behaviour, *International Journal of the Addictions*, 27, pp. 129-46.
54. Hochhauser, M. (1989) AIDS and chemical dependency; prevention needs of adolescents. Third National Forum on AIDS and Chemical Dependency of the American Society of Addiction Medicine (1989, Miami, Florida), *Journal of Psychoactive Drugs*, 21, pp. 381-5.
55. Leigh, B. & Morrison, D. (1991) Alcohol consumption and sexual risk-taking in adolescents, *Alcohol, Health and Research World*, 15, pp. 58-63.
56. NHMRC Special Unit in AIDS Epidemiology and Clinical Research (1990) *Cumulative analysis of AIDS cases in Australia* (Canberra, Australian Government Publishers).
57. Loxley, W. & Ovenden, C. (1993) *Youth and HIV/AIDS: a review* (Perth, National Centre for Research into the Prevention of Drug Abuse, Curtin University of Technology).
58. Wight, D. (1992) Impediments to safer heterosexual sex: a review of research with young people, *AIDS Care*, 4, pp. 11-23.
59. Brooks-Gunn, J. & Furstenberg, F. F. (1990) Coming of age in the era of AIDS: puberty, sexuality and contraception, *Milbank Quarterly*, 68, pp. 59-84.
60. Moore, S. & Rosenthal, D. (1994) *Sexuality in adolescence* (London, Routledge).
61. Paikoff, R. (1995) Early heterosexual debut: situations of sexual possibility during transition to adolescence, *American Journal of Orthopsychiatry*, 65, pp. 389-401.
62. Nickerson, C. A. E. (1990) The attitude/behavior discrepancy as a methodological artifact: comment on 'sexually active adolescents and condoms', *American Journal of Public Health*, 80, pp. 1174-9.
63. Lewis, C. E. & Lewis, M. A. (1989) Peer pressure and risk-taking behavior in children, *American Journal of Public Health*, 74, pp. 580-4.
64. Greig, R. & Raphael, B. (1989) AIDS prevention and adolescents, *Community Health Studies*, 13, pp. 211-9.
65. Friedman, H. L. (1989) The health of adolescents: beliefs and behaviour, *Social Science Medicine*, 29, pp. 309-15.
66. Moore, S. & Rosenthal, D. (1991) Adolescent invulnerability and perceptions of AIDS risk, *Journal of Adolescent Research*, 6, pp. 164-80.
67. Rosenthal, D., Moore, S. & Flynn, I. (1991) Adolescent self-efficacy, self esteem, and sexual risk taking, *Journal of community and Applied Social Psychology*, 1, pp. 77-88.
68. Howard, J. (1993) Taking a chance on love: risk behaviour of Sydney street youth, *Journal of Paediatric Child Health*, 29, pp. S60-5.
69. Saha, L. & Pilkinton, N. (1991) Youth and the language of AIDS, *Youth Studies*, 10, pp. 26-31.
70. Tversky, A. & Kahneman, D. (1974) Judgement under uncertainty: heuristics and biases, *Science*, 185, pp. 1124-31.
71. Darke, S. & Hall, W. (1990) The injecting and sexual behaviour of intravenous drug users in Sydney, *Medical Journal of Australia*, 152, pp. 446.
72. Loxley, W., Marsh, A. & Lo, S. K. (1991) Age and injecting drug use in Perth, Western Australia: the Australian National AIDS and Injecting Drug Use Study, *AIDS Care*, 3, pp. 363-72.
73. Ross, M. W. & Carson, J. A. (1988) Effectiveness of distribution of information on AIDS: a national study of six media in Australia, *New York State Journal of Medicine*, 88, pp. 239-341.
74. Goodman, E. & Cohall, A. T. (1989) Acquired Immunodeficiency Syndrome and adolescents : knowledge, attitudes, beliefs and behaviours in a New York City

adolescent minority population, *Pediatrics*, 84, pp. 36-42.
75. Spooner, C., Flaherty, B. & Homel, P. (1992) *Results of a street intercept survey of young illicit drug users in Sydney* (Sydney, New South Wales Drug and Alcohol Directorate).
76. Baxter, D. N. & Schlecht, B. (1990) Patterns of behaviour amongst injecting drug users: implications for HIV, *Public Health*, 104, pp. 321-5.
77. Loxley, W. & Davidson, R. (1991) Why do injecting drug users take risks?, *National AIDS Bulletin*, pp. 32-8.
78. Spooner, C., Bishop, J., Parr, J., Stephenson, P. & McLauchlan, L. (1996) Study of HIV risk amongst injecting drug users in a rural setting: Cairns (Cairns, Peninsula and Torres Strait Region, Queensland Health).
79. Marsh, A. & Loxley, W. (1991) *The Australian National AIDS and Injecting Drug Use Study: Perth 1989* (Perth, WA, Curtin University Press).
80. Abdul-Quader, A. S., Tross, S., Friedman, S. R., Kouzi, A. C. & Des Jarlais, D. C. (1990) Street recruited intravenous drug users and sexual risk reduction in New York City, *AIDS*, 4, pp. 1075-1079.
81. Farrell, G. (1992) Interferon treatment for chronic viral hepatitis in Australia: is it worth it?, *Medical Journal of Australia*, 153, pp. 227-30.
82. Carruthers, S. & Loxley, W. (1994) *Hepatitis C and young drug users* (Perth, National Centre for Research into the Prevention of Drug Abuse, Curtin University of Technology).
83. Bell, J., Batey, R., Farrell, G. *et al.* (1990) Hepatitus C virus in injecting drug users, *Medical Journal of Australia*, 153, pp. 274-6.
84. Crofts, N., Hopper, J., Milner, R., Breschkin, A. & Locarnini, S. (1994) Blood-borne viruses among Australian injecting drug users: implication for transmission of HIV, *European Journal of Epidemiology*, 10, pp. 687-94.
85. Crofts, N., Hopper, J., Bowden, D. *et al.* (1993) Hepatitus C virus infection among a cohort of Victorian injecting drug users, *Medical Journal of Australia*, 159, pp. 237-41.
86. National Working Group on HIV Projections (1992) *Estimates and projections of the HIV epidemic in Australia 1981-1994. Internal technical report* (Sydney, National Centre in HIV Epidemiology and Clinical Research).
87. Carruthers, S. & Loxley, W. (1995) Hepatitis C and young users: are they about to join the epidemic?, *Australian Journal of Public Health*, 19, pp. 421-4.
88. White, J. & Humeniuk, R. (1994) *Alcohol misuse and violence: exploring the relationship* (Canberra, Australian Government Publishing Service).
89. Wallace, A. & Travis, G. (1994) *The incidence and prevalence of alcohol use violence in the Australian community* (Canberra, Australian Government Publishing Service).
90. Road Safety Committee (1995) *The effects of drugs (other than alcohol) on road safety* (Melbourne, L.V. North, Government Printer).
91. Drummer, O. (1995) A review of the contribution of drugs in drivers to road accidents, in: Road-Safety-Committee (Ed.) *The effects of drugs (other than alcohol) on road safety*, pp. 1-28 (Melbourne, L.V. North, Government Printer).
92. Chesher, G. B. (1990) Designer drugs: the 'whats' and the 'whys', *Medical Journal of Australia*, 153, pp. 158-61.
93. Noggle, F. T., Clarke, C. R., Davenport, T. W. & Coker, S. T. (1985) Synthesis, identification and acute toxicity of alpha-benzylphenethylamine and alpha-benzyl-N-methylphenethylamine: contaminents in clandestine preparation of amphetamine and methaamphetamine, *Journal of the Association of Official Analytical Chemists*, 68, pp. 1213-22.
94. Allcott, J. V., Barnhart, R. A. & Mooney, L. A. (1987) Acute lead poisoning in two users of illicit methamphetamine, *Journal of the American Medical Association (JAMA)*, 258, pp. 510-511.
95. Chiang, W. & Goldfrank, L. (1990) The medical complications of drug abuse, *Medical*

Journal of Australia, 152, pp. 83.
96. Kinnier, R., Metha, A., Okey, J. & Keim, J. (1994) Adolescent substance abuse and psychological health, *Journal of Drug and Alcohol Education*, 40, pp. 51-6.
97. Van Hasselt, V., Null, J., Kempton, T. & Bukstein, O. (1993) Social skills and depression in adolescent substance abusers, *Addictive Behaviours*, 18, pp. 9-18.
98. Heaven, P. (1994) *Contemporary adolescence: a social psychological approach* (South Melbourne, MacMillan Education Publishing).
99. Newcomb, M. (1987) Consequences of teenage drug use: the transition from adolescence to young adulthood, *Drugs and Society*, 1, pp. 25-60.
100. Newcomb, M. D. & Bentler, P. M. (1988) *Consequences of adolescent drug use: impact on the lives of young adults* (Newbury Park, CA, Sage Publications).
101. Bentler, P. (1992) Etiologies and consequences of adolescent drug use: implications for prevention, *Journal of Addictive Diseases*, 11, pp. 57.
102. Miller, R. (1992) An evaluation of the process of treatment in a residential program for adolescent drug abusers *School of Behavioural Sciences* (Sydney, Macquarie University).
103. Greenberg, B. (1992) Issues in adolescent treatment *Proceedings of the 13th World Conference of Therapeutic Communities, Athens: 1990*, pp. 103-6 (Athens, World Conference of Therapeutic Communities).
104. Goldstein, P. (1985) The drugs-violence nexus: a tri-partite conceptual framework, *Journal of Drug Issues*, 15, pp. 493-506.
105. Johnson, B. D., Goldstein, P. J., Preble, E. *et al.* (1985) *Taking care of business: the economics of crime by heroin users* (Lexington, MD, Lexington Books).
106. White, H., Pandina, R. & LaGrange, R. (1987) Longitudinal predictors of serious drug abuse and delinquency, *Criminology*, 25, pp. 715-40.
107. Klee, H. & Morris, J. (1994) Crime and drug misuse: economic and psychological aspects of the criminal activities of heroin and amphetamine injectors, *Addiction Research*, 1, pp. 377-86.
108. Ireland, C. & Thommeny, J. (1993) The crime cocktail: licensed premises, alcohol and street offenses, *Drug and Alcohol Review*, 12, pp. 143-50.
109. Fagan, J., Stewart, D. & Hansen, K. (1983) Violent men or violent husbands? Situational characteristics and background factors in domestic and extra-domestic violence, in: Finkelhor, D., Gelles, R., Hotaling, G. & Strauss, M. (Eds.) *The dark side of families: current family violence research* (Beverley Hills, Sage Publications).
110. King, I. (1991) Disadvantaged youth project: final report (Sydney, Kings Cross Youth Resources).
111. Farrow, J. (1995) Service delivery strategies for treating high-risk youth: delinquents, homeless, runaways, and sexual minorities, in: Rahdert, E. & Czechowicz, D. (Eds.) *Adolescent drug abuse: clinical assessment and therapeutic interventions*, pp. 39-48 (Rockville, MD, National Institute on Drug Abuse).
112. Salmelainen, P. (1995) The correlates of offending frequency: a study of juvenile theft offenders in detention (Sydney, New South Wales Bureau of Crime Statistics and Research).
113. Watters, J., Reinerman, C. & Fagan, J. (1985) Causality, context, and contingency: relationships between drug abuse and delinquency, *Contemporary Drug Problems: A Law Quarterly*, 12, pp. 351-73.
114. Elliott, D., Huizinga, D. & Menard, S. (1989) *Multiple problem youth: delinquency, substance use, and mental health problems* (New York, Springer-Verlag).
115. Johnson, B., Schmeidler, J., Wish, E. & Huizinga, D. (1986) *The concentration of delinquent offending: the contribution of serious drug involvement to high delinquency rates* (New York, Narcotic and Drug Research Inc).
116. Fagan, J., Weis, J. G. & Cheng, Y. (1990) Delinquency and substance use among inner-city students, *Journal of Drug Issues*, 20, pp. 351-402.

117. Faupel, C. & Klockars, C. (1987) Drug-crimes connections: elaborations from the life histories of hard-core heroin addicts, *Social Problems*, 34, pp. 54-68.

118. Hawkins, J. D., Lishner, D. M., Jenson, J. M. & Catalano, R. F. (1987) Delinquents and drugs: what the evidence suggests about prevention and treatment programming, in: Brown, B. & Mills, A. (Eds.) *Youth at high risk for substance abuse*, pp. 81-131 (Rockville, MD, US Department of Health and Human Services).
119. Hollin, C. (1993) Advances in the psychological treatment of delinquent behaviour, *Criminal Behaviour and Mental Health*, 3, pp. 142-57.
120. Mulvey, E., Arthur, M. & Dickon-Repucci, M. (1993) The prevention and treatment of juvenile delinquency: a review of the research, *Clinical Psychology Review*, 13, pp. 133-67.
121. Henggeler, S. & Borduin, C. (1990) *Family therapy and beyond: a multisystemic approach to treating the behavior problems of children and adolescents* (Pacific Grove, CA, Brooks/Cole).
122. Borduin, C., Mann, B., Cone, L. *et al.* (1995) Multisystemic treatment of serious juvenile offenders: long-term prevention of criminality and violence, *Journal of Consulting and Clinical Psychology*, 63, pp. 569-78.
123. Dryfoos, J. (1990) *Adolescents at risk. Prevalence and prevention* (Oxford, Oxford University Press).
124. Jessor, R., Donovan, J. & Costa, F. (1991) *Beyond adolescence: problem behavior and young adult development* (Cambridge, Cambridge University Press).
125. Needle, R., Brown, P., Lavee, Y., Su, S. & Doherty, W. (1988) Costs and consequences of drug use: a comparison of health care utilization and social-psychological consequences for clinical and nonclinical adolescents and their families, *International Journal of the Addictions*, 23, pp. 1125-43.
126. Daroff, L., Marks, S. & Friedman, A. (1990) The parents' predicament, in: Friedman, A. & Granick, S. (Eds.) *Family therapy for adolescent drug abuse*, pp. 85-108 (Lexington, MA, DC Heath and Company).
127. National Institute On Drug Abuse (1984) *Parents: what you can do about drug abuse* (Washington, DC, US Government Printing Office).
128. Czechowicz, D. (1988) Adolescent alcohol and drug abuse and its consequences - An overview, *American Journal of Drug and Alcohol Abuse*, 14, pp. 189-97.
129. Hall, W., Solowij, N. & Lemon, J. (1994) *The health and psychological consequences of cannabis use* (Canberra, Australian Government Publishing Service).
130. Kandel, D., Davies, M., Karus, D. & Yamaguchi, K. (1986) The consequences in young adulthood of adolescent drug involvement, *Archives of General Psychiatry*, 43, pp. 746-54.
131. Alder, C. & Read, H. (1992) *The re-integration problems of drug using young offenders. Mational Campaign Against Drug Abuse Monograph Series No. 23* (Canberra, Australian Government Publishing Service).
132. Morrison, V. & Plant, M. (1990) Drug problems and patterns of service use among illicit drug users in Edinburgh, *British Journal of Addiction*, 85, pp. 547-54.
133. Morrison, M., Smith, D., Wilford, B., Ehrlich, P. & Seymour, R. (1993) At war in the fields of play: current perspectives on the nature and treatment of adolescent chemical dependency, *Journal of Psychoactive Drugs*, 25, pp. 321-30.
134. Brown, H. (1991) *Report on services required for adolescents with drug-related problems* (Prahran, Victoria, Taskforce Community Involvement Centre).
135. Friedman, A. & Glickman, N. (1986) Program characteristics for successful treatment of adolescent drug abuse, *Journal of Nervous and Mental Disease*, 174, pp. 669-79.

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4 The client group: adolescent substance abusers

4.1 Characteristics of adolescents

When dealing with adolescents with maladaptive patterns of substance use, it is sometimes difficult to distinguish between dysfunctional behaviour that requires intervention and normal adolescent behaviour. Furthermore, those responsible for assessing and working with adolescents need to understand the capacities and normal tendencies of adolescents to ensure that their service is developmentally appropriate and that the expectations of the service are appropriate to their client's developmental stage. For these reasons, an outline of current knowledge of adolescent psychosocial development is presented.

'Adolescence' can be defined as 'the psychological response to the biological event of puberty within a particular social/environmental/cultural context'. [1] (p. 12) There are certain tendencies that adults might find frustrating, but must acknowledge as normal for adolescents. For example, adolescents tend to be risk-takers because they feel invulnerable to the risks [2] or at least under-estimate risks [3]; have incomplete impulse control; and have a here-and-now orientation. [4] Adult treatment programs tend to have a long-term perspective that is irrelevant to adolescents.

Greenberg has discussed the issue of the need to consider adolescent tendencies in drug-treatment programs. [5] Greenberg noted, for example, that:

- adolescents feel they will live forever, that they can take risks without consequences and that there is no need to deal with any problems about their substance use now because there will be plenty of opportunities in the future. Adults, on the other hand, have come to realise their limitations. Greenberg has suggested that adolescents need to be reminded of the seriousness of their predicament
- adolescents have a limited attention span and this needs to be considered when scheduling their daily activities
- adolescents have a different concept of time to adults; a month is much longer for a young person than an adult. This has implications for scheduling their program
- adolescents lack experience in communal responsibility and need support to work in an environment that expects this.

What accounts for these adolescent characteristics? Some explanation can be found in the notions of developmental tasks, adolescent needs, and in various psychosocial theories about human development.

4.1.1 Developmental tasks

Adolescence has been seen as a period of achieving a number of developmental tasks. [1, 6-8] These tasks relate to the development of a sense of identity [9] and include:

- relationships with peers
- emotional independence (including separation from parents)
- a vocation
- values
- a sex-role identity.

Miller has suggested that cognitive development could be added to the list of developmental tasks. [10] The nature of the specific developmental tasks of adolescents can vary from one culture to another [11] and across time. Success or failure in achieving these tasks has been regarded as crucial for the adolescent's ability to function in society. [6]

According to Coleman's 'Focal Theory', adolescents focus upon each issue one at a time rather than all at once. In so doing, adolescents reduce the stress involved with dealing with each issue. [12] Problems arise when adolescents do not have the opportunity to control the pace of their development at a rate that they can cope with. [12, 13] Hence,

programs that try to address a number of issues simultaneously need to consider the ability of adolescent clients to deal with this.

Ideas about how service providers should be involved with these tasks has changed. In particular, Snyder and Ooms discuss how services used to tend to try to assist adolescents to break away from the family, whereas:

> ...more recently, a view has emerged from research in which the adolescent is seen as participating in renegotiation of the parent-child relationship. He or she maintains ties with the parents and at the same time functions with increased independence. The adolescent is seen as maturing in the context of his or her family. [14] (p. 3)

Substance use can influence the achievement of developmental tasks in a way that can be incidental or detrimental. For example, alcohol consumption might be incidental to socialising, or could damage socialisation when it is associated with obnoxious, aggressive, or otherwise antisocial behaviour. Adolescent-service providers need to be mindful of where adolescents are at with their developmental tasks and how they might be able to assist with their achievement.

4.1.2 Adolescent needs

While adolescents might be busy trying to achieve developmental tasks, they also have specific needs that, from their perspective, are important. Cavaiola and Kane-Cavaiola have outlined five needs that help to characterise adolescence [1]:

1. a need for power
2. a need for autonomy and non-conformity
3. a need for freedom
4. a need for structure
5. a need for peer acceptance.

To this list, might be added a number of other needs such as:

6. a need for fun
7. a need for support and nurturing.

Programs that do not provide the opportunity for, or facilitate, adolescents to meet these needs in a positive way could find their clients dropping out or coping poorly. This can be a difficult task as some needs can conflict with others, particularly the need for structure versus the need for freedom and autonomy. Further, adolescents tend to push for freedom and autonomy, making the provision of structure a difficult task. However, if structure is not provided, adolescents will often feel unsettled. In summary, workers have a difficult, but necessary, task of considering the needs of adolescents when planning and implementing programs.

4.1.3 Theoretical perspectives on adolescence

Heaven reviewed a variety of theories that are useful for understanding adolescence. For example:

Behavioural theory developed by Skinner, Pavlov and others focuses on how behaviour is shaped by environmental rewards and punishments

Social cognitive theory: Bandura emphasises the importance of observational learning, modelling, imitation, and identification in human development

Cognitive-developmental theory: Piaget proposed a model whereby adolescents should move from concrete operational thinking to formal operational thinking from the age of about 12 years. That is, an increasing ability to think abstractly, to go beyond the here and now and to understand things from other people's perspectives

Biological theory: Gesell argued that much of human development is biologically determined, however further research is needed to explain the links between hormones and behaviour and mood.

No theory explains all adolescent behaviour, although each one gives some insight into adolescent cognition and behaviour. It is important to consider what motivates

adolescent behaviour: are adolescents deliberately being problematic or are their actions reflecting what they have learnt or reflecting their cognitive developmental level? For example, adolescents might be uncommunicative because they are being generally resistant or because they find it hard to communicate about their substance use because their abstract reasoning ability is not sufficiently developed for them to understand why they are abusing substances.

4.1.4 Summary

This brief review of issues in adolescence has highlighted the many adolescent-specific issues that need to be considered when planning programs or when assessing and working with adolescents. Failure to do so could well result in adolescents dropping out of treatment and feeling resentful of service providers for not understanding their perspective, with a possible net result that their already problematic behaviour is exacerbated. In fact, a study of the program characteristics for successful treatment of adolescent substance abuse by Friedman and Glickman found that a perception by clients that staff members allow and encourage free expression and spontaneous action was positively related to treatment outcome. Friedman and Glickman suggested that this perception 'could have contributed to a more positive response by the clients to the program and enhanced their motivation to reduce their drug use' [15] (p. 677)

4.2 Adolescents in treatment: do they differ to adults in treatment?

Are adolescents who need professional help about their substance use any different to their adult counterparts? A number of differences are mentioned in the review above. For example, adolescents are less cognitively developed and less emotionally mature so staff members need to have realistic expectations of adolescents' ability to look after themselves.

Adolescent substance abusers are also less committed to changing their substance-use lifestyle than adult substance abusers. This relates to Prochaska and DiClimente's stages of change model [16] and is important because motivation to change has been found to be associated with outcome among adolescents [17] and drop-out rates, at least among adult clients. [18] Consequently, staff members should not expect adolescent clients to be motivated, but should develop the capacity to deal with reluctant or resistant clients. Motivational interviewing might assist. [19] Otherwise, allowing adolescents to enter and leave a program without a sense of failure can assist each exposure to a program to be a positive experience.

Studies of adolescents and adults in drug-treatment programs have found numerous differences between the two groups. One study compared adolescents and adults who underwent diagnosis at a drug-treatment agency in Illinois that provided referral, residential, non-residential, early intervention, and prevention programs. [20] This study found that, relative to adults, adolescents were significantly more likely to have:

- used amphetamines or hallucinogens
- problems about substance use at school or work
- ever drunk alcohol heavily
- had problems relating to alcohol use
- experienced family problems:
  - a violent household
  - physical abuse
  - a substance-abusing family member
- had psychological problems:
  - hallucinations
  - trouble understanding, concentrating or remembering
  - trouble with controlling temper or violent behaviour

- attempted suicide
- ever been treated for emotional problems

and significantly less likely to have:

- been married
- been employed at admission
- used heroin, methadone or cocaine
- opiates use as the primary substance used
- ever been addicted
- ever spent time in gaol.

In addition, adolescents tended to have started using substances at a younger age (mean = 12 years compared to 15 years) and to have been involved in criminal activities from a younger age (mean = 12 years compared to 16 years) than adults. However, adults still tended to have used substances for a longer period than adolescents (10 years compared to four years).

A second study related specifically to clients of residential facilities. [21] This study indicated that adolescent clients were more likely than adult clients to:

- have a disorganised family background
- have had counselling at an earlier age, particularly after suicide attempts
- respond to pressures to stay in treatment from parents or from fear of legal detention
- require education and parental and family support
- not have suffered negative consequences of substance use.

West and Power found that younger patients in an alcohol-treatment program tended to accept a lower level of personal responsibilty for their condition than older patients. [22]

Bukstein and Kaminer reviewed differences between adolescent and adult substance abusers and argued that they are sufficiently different to require separate diagnostic criteria. [23] For example:

- heavy substance use in adolescence and problems relating to that use appear to decline with maturity, rather than predict substance abuse or dependence in later life. This does not support the notion that abuse in adolescence is simply the precursor of abuse in adulthood
- the consequences of abuse are different for adolescents relative to adults. For example, rates of alcohol-related problems such as deaths from drinking and driving, and arrests for drunkeness and drink-driving are higher among 18-24 year olds than among adolescents. Adolescents, on the other hand, have higher rates of vandalism and other crimes that are more tangential to substance use
- the social, familial, and developmental, contexts of substance use differ, that is, there are different reasons for use and constraints on use for adults and adolescents. For example, adolescent alcohol abuse can occur in response to increased independence from family controls and more opportunity to use alcohol. With normal developmental maturation, and social responsibility, problematic use tends to decrease.

The notion that adolescents tend to have problems with different substances relative to adults is supported in the Australian context by data collected for the natonal census of clients of treatment agencies (NCOCTA). [24] The census asked each drug-treatment agency in Australia to provide details about each client they saw on one designated day. The study was not directly set up to look at differences between adults and adolescents, so the results cited here should be viewed with caution. For example, adolescents were less likely to have been using residential services (29%) than adults (47%) and this could relate more to the sampling frame and the availability of services than to an effect of treatment-matching. Consequently, the samples might not be directly

comparable. The agency staff members were asked which substance or substances the client had been mainly having problems with. Staff was more likely to report that adolescents had primary problems with amphetamines, cannabis, inhalants, hallucinogens, and polysubstance use; and that adults had primary problems with alcohol, opiates, and benzodiazepines (Table 4.1). Further, in the previous year, adolescents were a little less likely to have injected opiates and more likely to have injected amphetamines than adults (Table 4.2).

Table 4.1: Main substances of abuse for adolescents and adults (percentages)

Main substance problem	Adolescents	Adults
amphetamines	35	29
cannabis	27	5
inhalants	4	0
hallucinogens	1	0
polysubstance use	10	3
alcohol	36	50
opiates	22	35
benzodiazepines	1	5

Table 4.2: Injected the substance in the previous twelve months

Main substance problem	Adolescents	Adults
amphetamines	23	13
opiates	22	29

Adolescents also appear to be prone to lapse for different reasons to adults. Studies of relapse rates and the situational features of initial lapse have found that adolescent lapses tend to be triggered by social pressure to drink, not negative emotional states, whereas adult lapses tend to be triggered by negative emotional states (situations of anger or frustrations, social pressure to drink, or interpersonal conflict). [25] Such differences are important to note for relapse-prevention training.

There are some inconsistencies among the studies. For example, De Leon's study found that adolescents were more likely to have problems about alcohol use than adults, whereas the NCOCTA indicated that alcohol was less likely to be the primary substance of abuse for adolescents relative to adults. Different research methods probably created these apparent inconsistencies. Overall, however, it appears that there are numerous differences between adolescents and adults in treatment programs above and beyond those differences that can simply be attributed to the developmental stage of adolescents. Relative to adults, adolescents seem to have a different pattern of substance use, to have come from more negative family situations, to be more psychologically affected by their substance abuse, and to be less committed to changing their substance use. These findings do make sense: the different patterns of substance use are consistent with differences found in general population studies; the more negative family situations might account, in part, for why their substance-related problems have become so serious so early in their lives; the more detrimental impact of substance use is consistent with the

notion that this abuse is occurring during a time of emotional and intellectual development; the lower commitment to changing their substance use relates to the fact that many are still reaping the benefits of substance use in terms of self-image, socialisation, and alleviating problems.

Even if adolescents needing treatment are different from adults needing treatment, does this mean that they require different programs? The need for adolescent-specific programs is supported by anecdotal evidence. For example, Alder and Read's investigation into the re-integration of young offenders with substance problems led them to conclude that mixing adolescents and adults in drug-treatment programs was detrimental to both groups:

> From the treatment program point of view, it can be equally frustrating and disuptive to try to integrate young people into an adult program. A member of program staff at Windana described an attempt to include young people in the Windana program:
>
> When we had four adolescents in our therapeutic program in Pakenham it was difficult to handle because the adults were finding their growth was being restricted in all aspects; they (the adolescents) were so immature that it was interfering from the work program to counselling...when you are talking to people in their thirties, talking about their problems, the youth didn't have the patience to try and understand-they had different problems...the adults were complaining so in the end we shifted the four of them [26] (p. 32)

In summary, adolescents in treatment are not just younger versions of adults in treatment, their issues and needs are qualitatively and quantitatively different and adolescent-specific services are best able to meet those needs.

4.3 Diverse clients: diverse issues and needs

Just as adults are not all the same, adolescents are a mixed group. They vary as a result of predisposition, environment, and experience. The subgroups discussed below are not the only subgroups of adolescents that exist. Thousands of subgroups could have been discussed such as injectors, sex-workers, anorexics, illiterates, and so on; the list is endless. The main reason that these groups are singled out is because they tend to be identified by drug-treatment staff members and researchers as groups with special needs.

While looking at subgroups can be useful, it must not be forgotten that all adolescents are individuals. Knowledge about subgroups can help workers to identify patterns of need, but stereotyping adolescents on the basis of gender, sexuality, or any other characteristic, is not useful.

In summary, the discussion below is a guide to some of the main issues that relate to service provision for some subgroups of adolescents. It should not be forgotten that each adolescent is an individual and that assuming adolescents from any group are all the same is rarely productive.

4.3.1 Males and females

It has been noted that male and female adolescents develop differently:

> Boys and girls follow different patterns of change, shaped both by the biological imperatives and the social conditioning. Boys appear to be more driven to achievement and aggression, while girls are more influenced by interpersonal relationships and the need for support and approval. Boys seem to get into more trouble with authorities, both in school and in their communities. [27] (p.25)

Such gender differences can have implications for male and female adolescents' preferences in types of activities (such as group discussions versus competitive sports), as well as how well they respond to the same activities.

The aetiology of substance use and abuse also differs according to gender. [28] For example, aggressiveness coupled with shyness has been found to be a strong predictor of later substance abuse among boys, but not girls. [29] Consequently, treatment services might need to be gender specific.

There has been a significant amount of research into treatment issues for adult females. [30-34] For example, compared with men, women have been found to be more susceptible to the physical effects of alcohol [35, 36], have different predictors for relapse [37], have lower social status [38], and less autonomy, particularly with regard to injecting

practices in the subculture of illicit substance use [39], and have lower self-esteem [40]. Issues that have been raised in connection with women with substance-use problems have included domestic violence [41], children [42], childhood sexual assault [43], and social stigma [44, 45].

The degree to which the issues and conclusions of adult gender issues are relevant to adolescents in drug-treatment programs in Australia in the 1990s is not known; there has been very little investigation into this area. However, there is sufficient evidence and there are anecdotal reports to justify concern about gender issues with adolescents. Beschner and Treasure reviewed the literature on substance use by female adolescents, and found that: [46]

- female adolescents in treatment had similar substance-use patterns to male adolescents
- female adolescents were outnumbered by male adolescents in the treatment setting
- females tended to enter treatment earlier than males
- females had started substance use at about the same time or a little earlier than males
- females tended to be characterised by staff as one of the following stereotypes: 'slut', 'intellectual junkie', 'abusive mother' or 'hypochondriac'
- treatment staff tended to be out of touch or unsympathetic to female clients' problems. For example, they tended to under-estimate the extent to which female clients felt unable to express themselves, had negative perceptions of their own bodies, felt too stupid or uneducated to be able to get a good job, and had suicidal tendencies.

After reviewing the differential reasons for substance misuse by adolescent females and their treatment experiences, the authors concluded:

> From the available literature it appears that girls who do enter treatment have to contend with a number of inequities, misperceptions, and biases. It is also becoming more apparent that many drug treatment programs are not adequately structured or equipped to address the special social, psychological, and medical needs of girls. (p. 207)

The relevance of Beschner and Treasure's research for Australian adolescents in the 1990s is not known. However, Maher has expressed concern about young females in mixed-gender residential settings on the basis of her ethnographic research methods in Australia:

> As Dimity, a young woman with extensive involvement in the juvenile justice system told me of her experience in a mixed-sex residential program for adolescents.
>
> 'It's just that its really hard sometimes caus' there's a lot of macho bullshit. They're bigger than you and they can stand over you. You feel intimidated by them and sometimes it's hard to bring up resentments like how you're feeling caus' you think they're gonna smash you and stand over you and specially after a while when you've let down all of the fronts you had up while you're on the streets. Like you're genuinely scared and I used to get intimidated caus' they get really angry and violent and they act out on you ... like in group with abuse stuff and that, I couldn't talk about that, or what I'm scared of. It's really hard to be how you are caus' you feel like you have to be really big and strong. Like if you were scared of the dark they will all really laugh at you. The boys hide their fears much better.' [47] (p. 37)

Miller noted that females tend to outnumber males in a residential drug-treatment facility for adolescents until the age of 17, at which time there is a sharp drop in the proportion of females. [10] Miller was not sure why this pattern exists. He gave a number of possible suggestions: females could seek treatment earlier than males; older females could be more likely to go to other (for example, adult or female-specific) treatment facilities or the large number of males aged 18 could be related to an increased motivation to deal with substance-use problems because of the threat of an adult prison (rather than Juvenile Justice facility), if caught re-offending. Another theory postulated by workers is that older adolescent females get 'looked after' by older males.

There has been little discussion on the specific needs of adolescent male sustance abusers. However, the distinctive needs of adolescent males are as important as the needs of adolescent females. For example, Biddulph has argued that adolescent males

particularly need male role models to assist in their social development. [48] Issues for male adolescent drug abusers require further research.

An issue of debate is whether drug-treatment programs, particularly residential programs, should be mixed-gender or gender-specific. Most (if not all) of the published debate so far are about adult programs. However, some of the issues raised in those debates are worth consideration for adolescent clients. Traditional programs have been described as having 'male, cognitive, emotional and interpersonal styles' [49] (p. 52), as reinforcing the stereotype of females as passive and dependent [50] and, at times, providing a setting that permits the sexual and physical harassment of females [51] and disinclined to cater to the needs of females with dependent children [42].

An evaluation of Jarrah House, a drug-treatment agency specifically for women in New South Wales, found that the service was better able to attract, retain, and cater to, women with children, women with histories of sexual abuse, women with histories of maternal substance misuse, and lesbians, than mixed-gender services. While this difference is important, it should be noted that the six-months treatment outcome was not significantly better for the women from the specialist service than the women in the mixed-gender services. While Jarrah House appears useful for attracting women who would otherwise not have sought, or stayed in, treatment, many other women prefer services that are not gender-specific. [52]

Of special note is the issue of adolescents with children. Apart from the practical issues such as accommodating parents and their children within a residential program, or providing childcare in non-residential programs, there is also the issue of the adolescent parents ability to care for children when having difficulty managing their own substance use. As Trad stated:

> Substance abuse impedes decision-making skills, lowers inhibitions and results in the relinquishment of responsibilities, outcomes which may have dire consequences for infants exposed to these behaviours. [53] (p. 421)

In summary, the main gender issues that adolescent services need to consider are:

- that males and females have gender-specific needs
- that females who are pregnant or have dependent children have special needs and concerns
- that males and females could have difficulty discussing certain issues (for example, sexuality, childhood sexual abuse) in mixed-gender groups, so gender-specific groups for males and females are recommended
- that the opportunity to learn to interact with both genders in a therapeutic environment could be too valuable to discard altogether, but that close/sexual relationships among any clients should be avoided as much as is possible because they can be disruptive to the group, as well as to the individuals involved
- the fact that males outnumber females can be threatening for female clients, particularly in a residential setting, and especially if the worker/s on duty is/are male.

4.3.2 Younger adolescents

Younger adolescents (11 to 14) are developmentally very different to older adolescents (15 to 19). Cavaiola and Kane-Cavaiola discuss this difference as follows [54]:

> Early adolescence covers approximately ages 14 to 15. These are ages of emotional lability, frantic and phrenetic activity which seems relentless. The group rules and usually the most pathological member of the group is looked up to as a leader. It is therefore, not unusual for teenagers to be quite cruel at these ages. Anyone, who is 'different' because of physical, mental disability, ethnicity or culture, or physical appearance, becomes the subject of ridicule...
>
> Middle adolescence (ages 15-17) is characterised by more settling in, i.e., more introspective and self-conscious behavior. Here adolescents are still peer oriented but the most pathological teenager is usually no longer intimidating the group. Cruelty becomes less frequent as group members are now able to tell one another to 'knock it off.' Steady relationships and dating take on utmost importance. Constant bickering, arguing with parents and siblings, most of the time will be critical and negative.
>
> Late adolescence (ages 17-19) is characterised by more settling down. This is where the 'tasks'

> become more focused upon. At this point, decisions regarding careers, relationships, issues of separation are in the forefront. Those adolescents who do not progress become Peter Pans, so to speak. They never really grow up. In late adolescence, one begins to realize that life does not hold limitless possibilities. (pp. 16-7)

Blume and colleagues have noted that the cognitive developmental skills that are required for participation in a skills-training program taught in a group format are less likely to be developed in adolescents under the age of 14 years. [55] They suggested that major modifications to such a program would be required for younger adolescents.

Anecdotal reports have suggested that problems have arisen from mixing the younger adolescents with older adolescents. For example, younger adolescents do not get as much opportunity or support to be a kid when activities are centred on self-responsibility, older adolescents are more vocal and assertive about what they want to do, and dominate younger adolescents, and younger adolescents try to emulate older adolescents and this is not always a good thing. Consequently, some adolescent programs have raised the entry criteria to exclude younger adolescents, others do not accept younger adolescents when the program is dominated by older adolescents. Programs need to cater for the developmental level of the adolescents. This could mean separating younger adolescents from older adolescents.

4.3.3 Adolescents from a non-English speaking background

While nearly one quarter (23%) of the total population in New South Wales in 1991 was born overseas, 16% of the 12 to 25 year old population in New South Wales was born overseas. [56] Two-thirds (68%) of young people born overseas were born in non-English speaking countries, the most common being Vietnam (12%), Lebanon (8%), Hong Kong (8%).

There is either limited or no reliable information on harmful substance use by people from non-English speaking populations in Australia, let alone adolescents from these populations. [57] People with non-English speaking backgrounds (NESB) have been targeted as a priority group in many health strategies because of concern about such issues as under-use of services due to lack of knowledge of services and inappropriateness of services for all cultures. [58] Longshore and colleagues have also found that ethnic minorities are less likely to perceive a need for treatment, perhaps because of a cultural belief that professional help for personal problems should not be sought, and holding negative stereotypes about drug-treatment services. [59]

An impression gained from consultations with service providers and adolescents was that problems with adolescents from non-English speaking backgrounds have not been so much the lack of cultural appropriateness of the program because most NESB adolescents regard themselves as 'Australian'. The problems have mainly centred on racist attitudes of other adolescent clients. Such racism is often exacerbated by the 'dog eat dog' and scapegoat mentality of adolescents who have lived on the street or been detained in juvenile detention centres. Workers have reported great difficulty in dealing with the racial issue.

A particular issue at the current time relates to Indo-Chinese adolescents. There is a trend of increasing numbers of Indo-Chinese adolescents in juvenile detention, most of whom have been primarily detained for substance offences [60], as well as anecdotal reports of increasing prevalence of heroin use in Sydney's western suburbs by Indo-Chinese adolescents. These trends suggest that adolescent drug-treatment programs could need to consider their attractiveness and appropriateness for Indo-Chinese adolescents who might differ from other adolescents not only because of their cultural background, but also because of issues about trauma from being in refugee camps and because of the high prevalence of gangs and heroin smoking in their community.

Cultural issues for each client should be identified within the assessment process and throughout treatment, particularly as interventions such as family therapy and confilict resolution might need to vary according to the cultural background of the client. [61] The

client can be a significant source of information on cultural issues as they relate to him/her. Ethnic-specific organisations, where they exist, can be another source of information and support for organisations and their clients. Such organisations might be able to run in-service training for staff, provide advice to managers and case-managers on ethnic issues and provide support to individual clients.

4.3.4 Gay and lesbian adolescents

Gay and lesbian adolescents with substance-use problems are often faced with other pressures related to their sexuality. These pressures include (among others) stress related to 'coming out' and possible pressure to use alcohol and illicit substances (particularly designer drugs) at gay venues and dance parties. Coming out can result in a low self-image and feelings of isolation as a result of family and peer rejection, homophobia, and trying to develop a new identity and lifestyle. As such, gay and lesbian adolescents, particularly those with substance-use problems, are seen as an at risk group for suicide [62-65]

4.3.5 Indigenous Australian adolescents

As with each of the subgroups of adolescents discussed in this section, there is substantial heterogeneity within the subgroup of indigenous Australian adolescents. For example, indigenous Australian adolescents in outback settlements, rural towns, and central Sydney, cannot be assumed to be the same and most of the research with indigenous Australian people appears to have been conducted outside the capital cities. Remembering this, a brief, non-comprehensive review of relevant literature is presented to draw attention to issues that are specific to, or prevalent among, substance-abusing indigenous Australian adolescents.

Brady has conducted and written up a significant amount of ethnographic research with indigenous Australian populations, particularly non-urban populations and with a particular interest in substance abuse by those aged 12 to 25. [66] Brady has stressed that indigenous Australian adolescents are, in many ways, similar to adolescents from other cultures. For example, solvent use and excessive alcohol use tend to be a result of the desire to be part of the peer group, because the experience is pleasurable, and because of parental role-models. [67]

However, a number of differences exist between indigenous and non-indigenous Australian adolescents, that contribute to substance abuse. Hunter discusses how the degree of disadvantage faced by indigenous Australian adolescents contributes to their substance-related problems. [68] Relative to non-indigenous Australian adolescents, indigenous Australian adolescents are more likely to experience unemployment, less likely to possess work qualifications, more likely to live in public housing, and more likely to be placed in a juvenile detention centre.

Numerous, predominantly US, models exist to explain substance abuse among indigenous populations. [69] However, no model has been agreed upon and the applicability of the models to indigenous Australian adolescents is not known. From a local perspective, Brady argues that indigenous Australian substance abuse is explained by different antecedents to non-indigenous Australian substance use:

> These relate to dispossession, colonisation, low socio-economic status and rapid social change. These are all eminently social factors. In other words, in contrast to our understanding of drug abuse in Western society, the reasons for Aboriginal drug abuse are seen to be primarily external, imposed factors rather than individual traits. [70] (p. 1)

Brady argues that notions of autonomy and relatedness, integral to indigenous Australian culture, appear to have exacerbated problematic substance use by indigenous Australian adolescents:

> Aboriginal social life, in the areas where I undertook my research, is marked by an emphasis on the autonomy of the individual, while at the same time it stresses notions of relatedness between people - connections that require constant outward expression through generosity, compassion and concern...Young people are treated as autonomous individuals, and learn from an early age that they have a wide range of

freedoms - a much wider range than would be tolerated by most white Australians...

Drinkers of alcohol and sniffers of petrol (both groups predominantly male) are able to transform the notion of personal autonomy, and the emphasis on generosity and indulgence, to their own ends. At their disposal are communities of people who have been socialised into the belief that to refuse the direct request of a relative is tantamount to admitting that they do not care for them, and that to remonstrate or dissuade them from their drug use is to interfere with their right to do what they please with their own bodies. [70] (pp. 73-4)

Among some indigenous Australian communities, adolescent substance misuse is perceived to have gone beyond their control. In regard to volatile substance abuse, Brady wrote:

> A major social ramification of sniffing has been that the behaviour of these young people has caused a crisis of faith among Aboriginal people in their society's ability to deal with problems. Young people who sniff exert considerable power over others, both because they are in an altered state which is bewildering and frightening to the uninitiated, and because in this altered state they often run wild, breaking windows, causing affray and screaming out...At a loss to deal with the unwillingness of young sniffers to listen to their parents, many adults leave their children to their own devices and hope that outside help and programs, or even institutionalisation, will solve the problem. [67] (p. 24)

Thus there is a pressing need for services that can be effective with indigenous Australian adolescents who use substances in a problematic manner. Hunter argues that while indigenous Australian adolescents can be among the most in need, they are a difficult group for services to assist:

> The reticence of health professionals towards working with intoxicated young aborigines must be challenged. While at times threatening, often ungrateful, and likely to repeat and return, it is these aborigines who are most vulnerable and in greatest need. [68] (pp. 91-2)

There are arguments for and against the provision of indigenous Australian-specific services that are beyond the scope of this report. Given the reality that indigenous Australian adolescents will present to mainstream services, how can these services be made attractive, appropriate, and effective for indigenous Australian adolescents? Workers from the Aboriginal and Torres Strait Islanders' Commission with responsibility for substance-use issues were interviewed as part of an investigation into the needs of substance-affected adolescents in the Australian Capital Territory. [71] These workers recommended:

- having indigenous Australian as well as non-indigenous Australian workers on staff, and an indigenous Australian liaison officer
- ensuring the environment was accessible to indigenous Australian adolescents, for example, by having indigenous Australian posters on the walls
- training of non-indigenous workers to increase awareness of racism and knowledge of appropriate strategies for dealing with racism.

In addition to the above recommendations, one of the key strategies of the National Aboriginal Health Strategy Working Party: that 'people suffering problems of addiction should not, wherever possible, be removed from their community environment to obtain treatment'. [72] (p. 203) This principle is counter to the notion of residential treatment for indigenous adolescents. However, residential treatment for a short period which incorporates maintaining links with the adolescent's community might be appropriate and effective. [16]

Burns and colleagues also recommend, at least in the context of preventing petrol sniffing in rural areas that, encouraging indigenous Australian communities to use family relationships to dissuade adolescents from petrol-sniffing can be effective in addition to focusing on education, training, employment, and recreation. [73]

Indigenous Australian workers can assist with increasing the cultural appropriateness of interventions, or assisting indigenous Australian adolescents to benefit

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[16] Personal communication with health worker working with indigenous Australian adolescents in Redfern, 1994.

from the program. For example, different communication methods or interpretations of messages can be mediated via the indigenous Australian worker [74, 75]. Indigenous Australian workers might also provide more appropriate role-models for indigenous Australian clients than other staff. However, care needs to be taken when employing indigenous Australian workers to ensure indigenous Australian clients feel that their confidentiality is protected. The concept of shame can make it more difficult for indigenous Australian adolescents to present problems to a person of their own community. Furthermore, indigenous Australian adolescents might be reluctant to talk with indigenous Australian people from particular families. [67] Consultations on these issues needs to be done on a local level to ensure any indigenous Australian staff is acceptable and effective with indigenous Australian adolescents likely to use the program.

In summary, many indigenous Australian adolescents are in great need of assistance about substance-related problems and agencies need to be active in implementing strategies that make their services attractive and effective for indigenous Australian adolescents. Worker-training in indigenous Australian issues, and close liaison with indigenous Australian communities and indigenous Australian workers, can assist with this process.

4.3.6 Adolescents with a dual diagnosis

Psychopathology is often encountered by services dealing with adolescents with substance-use related problems. [76, 77] Furthermore, studies of adolescents in the community, [78] particularly homeless adolescents [79], have found significant concurrence of substance-use disorder with other psychiatric disorders. This combination of a diagnosis of substance abuse with another psychiatric condition is referred to as 'dual diagnosis'.

Mood disorders (unipolar depressive disorder, bipolar disorder) and conduct disorder (antisocial personality disorder continuum) have been found to be the most common psychiatric disorders among adolescents in treatment for substance-use problems. [80] Other disorders include anxiety disorders, dissociative disorders, attention deficit hyperactivity disorder, personality disorders (especially cluster B), schizophrenia, and eating disorders (bulimia). [76, 81] As adolescence is a time when some serious, but treatable, mental disorders might initially present (eg schizophrenia and bipolar mood disorder), accurate diagnosis is crucial. [82, 83]

Following assessment, the case plan varies according to the type of disorder: what is appropriate for a client with an affective and adjustment disorder might not be appropriate for a client with a conduct disorder. [84] In fact some clients with a dual diagnosis might need no, or minimal, input from specialist mental health services. For example, many of the personality disorders could respond better to a structured environment within a drug-treatment program with firm limits and boundaries and clear behavioural expectations and consequences for breaches. [85] Given that a) conduct disorder and substance abuse share common symptoms, and b) the recommended interventions for both disorders are very similar, it might be better to describe adolescents who meet criteria for both of these disorders as having a problem-behaviour syndrome, rather than a dual diagnosis.

As discussed by Howard, dual diagnosis clients often 'fall between the cracks' and receive less than adequate responses from both mental health services and those designed for substance dependence. [86] There are several possible reasons for this situation. The use of neuroleptics can conflict with an all 'drugs-free' milieu, some behaviour of mentally disordered clients could respond poorly to confrontive techniques, and the complicated management of such clients might be beyond the expertise of agencies with little, or no, mental health professional back-up. In addition, substance-using clients are often regarded and treated very negatively in mental health settings; frequently described as manipulative, difficult, likely to abuse any medications given, dangerous, and non-compliant. [87]

It can be difficult to distinguish psychiatric symptoms from the consequences of substance use, so it is recommended that services delay assessment until at least a couple of weeks after substance use has ceased and that adolescent services be equipped to deal with clients with dual diagnoses.

Furthermore, treatment goals and plans need to be set with consideration for the abilities and special difficulties of adolescents with dual diagnoses. Research with adult clients indicates that the fewer problems clients have upon admission, the more likely they are to benefit from the program. For example, personality disorders, especially antisocial personality, have been found to be associated with poor treatment outcome among adult opiate addicts. [88]

Dual diagnosis patients cannot be ignored and specific treatment for both conditions is required. In answer to the question of what to treat first, El-Guebaly recommends observation of the client while substance-free for 2 to 4 weeks, then concurrent treatment for both problems on a long-term basis. [89]

4.3.7 Survivors of trauma

The finding that childhood abuse and/or neglect is a risk factor for substance abuse and self-mutilation has been discussed above. Many adolescents who come to the attention of health and welfare workers, particularly residential treatment programs, have also survived other traumas throughout their childhoods and adolescences; sometimes as a result of their substance-use lifestyles, rather than as a cause. [90, 91] Traumas might result from severe acute, or prolonged stressors such as rape [92] or imprisonment [93]. Other traumatic experiences commonly reported in adolescent treatment programs include being witness to extreme violence (in the home or in a war situation), and refugee experiences.

Van der Kolk and Saporta review the literature on biological responses to trauma noted that 'traumatized people are prone to have a poor tolerance for arousal, to respond to stress in an all-or-nothing way, and to feel emotionally numb' [94] (p. 26-7) Specific symptoms of post-traumatic stress disorder (PTSD) include 'intrusive re-experiences of elements of the trauma in nightmares, flashbacks, somatic reactions' (p. 30), anxiety disorders and, for victims of child abuse, chronic problems with aggression against others and themselves.

Stewart reviewed and discussed the issue of adolescent survivors of trauma with in drug-treatment programs. [91] For example, such adolescents have tended to drop out of treatment due to fear of re-experiencing the original trauma, to have trouble trusting adults as adults have generally been the perpetrators of traumatic experiences, to feel hopeless about the world and their own place in the world, and to feel as though they have no control as they are victims. Stewart discussed treatment needs of traumatised adolescents, including 'coping and stress-reduction strategies...combined with cognitive and insight-oriented therapy' (p. 418) within an environment that provides structure and a sense of safety. Van der Kolk and Saporta argued that some issues can be too painful to discuss without medication, so that referral to a psychiatrist could be indicated in some cases.

The pace and timing of dealing with traumas can significantly influence outcomes. Jarvis, Copeland and colleagues's reported that women sexual abuse survivors consistently emphasised the need to control the pace of their own disclosure. [95] Furthermore, Howard has cautioned against tackling issues such as childhood sexual assault that cannot be adequately addressed by the program. [96] In particular, Howard suggested that a 2-week detoxification program is too short to deal with such emergent issues and referred to recent reports [97] that have recommended that 'family of origin' issues be dealt with later in recovery. While it is not possible, or appropriate, to stop disclosure of traumatic events, argued Howard, the task is to help the client hold onto the issue for the timebeing, until the problem can be dealt with properly.

In sum, some adolescent clients could be experiencing post-traumatic stress

disorder, and their behaviour could suggest that they are not cooperating or responding to treatment. Screening for significant stressors might assist identification of such individuals and the need for referral to specialist services. Disclosures of significant stressors should not be ignored, nor should they be dealt with by untrained staff as this could, inadvertently, exacerbate the problem.

4.3.8 Juvenile Justice referrals

A history of problematic substance use is highly prevalent among young offenders in contact with the Juvenile Justice (JJ) system. [98, 99] At present, referral from a JJ service is one of the most common sources of referral to adolescent residential drug treatment in New South Wales. The preponderance of adolescents from JJ has had a number of implications for service providers.

Firstly, JJ clients tend to have multiple problems and to be difficult to deal with. Most incarcerated young offenders come from chaotic social backgrounds, are without education or family support, and psychological morbidity and problem behaviour are common. [100] JJ staff, as well as drug-treatment staff, has reported increasing problems with violence with JJ adolescents. Consideration needs to be given to security (for staff and for clients) and the organisation's ability to manage violent or otherwise antisocial clients.

Additionally, adolescents who are accustomed to institutional life can be anti-authoritarian and know how to manipulate groups and individuals to their own advantage. Workers who are naive to such manoeuvres can be controlled by such adolescents. This is a situation that is stressful for the worker and that can be damaging for other clients.

Second, motivation to deal with substance problems can be low, or ambivalent, among JJ adolescents if they only agree to placement in a drug-treatment setting as a preferred option to placement in a JJ facility. This lack of motivation can sabotage not only their own treatment, but the treatment of other clients. On the other hand, being 'made to go to treatment' sometimes gives young offenders an excuse to get help with their substance-use problems, without having to admit to wanting that help.[17]

Finally, recidivism can be as much an issue as the relapse to problematic substance use. In fact, given the association between crime and substance use [101], dealing with one issue and not the other is unlikely to be effective in the long term.

In summary, JJ adolescents are an important, but difficult client group for adolescent drug-treatment services. Specific issues such as conduct disorder, motivation to change, institution-mentality, and recidivism, have implications for issues such as worker-selection and worker-training, behavioural control, worker safety, and program planning.

4.3.9 Homeless adolescents

Numerous reports have been written in relation to homeless adolescents. [102-104] The sheer volume of reports on adolescent homelessness reflects concern in Australia with this phenomenon. A majority of homeless adolescents report heavy substance use [103, 105], many have reported experiencing substance-related problems [106], and other health problems are common [107]. As recorded in the Burdekin Report, substance use has particular utility for homeless adolescents:

> There are a number of psychological, developmental and social factors that contribute to drug use. It functions in a very specific way...It relieves emotional and psychological distress. Basically it provides emotional anaesthesia. It can operate to maintain the present-centredness that blocks out the past and it helps avoid thinking about the future.
>
> Experimental use of a wide variety of substances is common behaviour...but it also provides excitement and is a form of risk-taking. It operates to prop up a low self-esteem in the short-term through the

[17] Richard Miller, Clinical Coordinator, Ted Noffs Foundation, personal communication, 1995.

> provision of good feelings and then when the potential damaging effects (become apparent, they) are just not viewed as relevant. 'It doesn't matter because I'm not particularly worthwhile anyway'.
>
> Drug use facilitates peer cohesion, sociability and bonding and thereby it decreases the social isolation that they experience. It also alleviates boredom and the monotony of an existence where the individual is cut off from the mainstream society through basic lack of financial resources to participate in it. It provides emotional anaesthesia and disinhibiting effects, thereby allowing prostitution and other means of getting an income to be done a lot more easily. So...drug use can be seen as an integral part of the street lifestyle and it is a response to psychological needs and the social context in which they live. [103] (p. 238)

A study of the substance-related issues and service needs of homeless adolescents was conducted in Brisbane and included consultations with homeless adolescents, as well as with workers. [108] The study report describes the situation and needs of homeless adolescents, and concludes with a list of 18 recommendations for services. One of the over-riding issues is the need for homeless adolescents to feel that others (workers and peers) understand and emphathise with their situation. Homeless adolescents appear to be accustomed to hardship and being looked down upon. Service provision needs to consider not just the practical needs of accommodation, but the emotional need of having somewhere to belong and somebody who cares.

4.3.10 Rural adolescents

Rural areas can vary significantly in terms of their geographic, demographic, and social, characteristics. As described by Sturmey, rural areas include coastal areas characterised by tourism and movement of young people in and out of the area; traditional farming communities, mining communities, indigenous Australian communities, pastoral-based service towns, and pastoral properties. [109] There is much variation in factors such as income, opportunities, lifestyle, and access to services between, and within, rural areas.

Studies of the sociology of small towns, reviewed by Sturmey, have indicated that strong ties to the community, high density networks, high pressure to conform, high interest in other people's lives (gossip), and a narrow range of perspectives result in a conservatism that could adversely impact upon substance use, and the treatment of related problems. [109] For example, drinking alcohol might be the main source of socialising and recreation for a community, and fear of being stigmatised could impede help-seeking behaviour if that drinking gets out of control.

Sturmey made a number of recommendations for drug-treatment service provision in rural areas, some of which are listed below [109]:

- smaller towns need to be serviced via the provision of more local, multi-skilled, generalist workers or visiting specialists
- multi-purpose centres are a practical means of service delivery
- the acceptability of a service requires community consultation and support, as well as workers with suitable professional and personal qualities
- professionals in rural areas require ongoing professional supervision and training; in particular, generalist workers require training and support in substance issues.

4.3.11 Conclusion

Adolescent substance abusers are a heterogeneous group with various problems, issues, and needs. It is impractical to have specific services for each and every specific group. Furthermore, 'special' programs for 'special' people can be counter to the notions of treating people as individuals and of mainstream society accepting and understanding the diverse range of people who make up our society. Service providers need to adopt a dual strategy of a) utilising what is already known about subgroup issues to be proactive in ensuring their service is accessible, appropriate, and effective for all adolescents and b) talking to adolescent clients; asking them about their individual needs and involving them in service planning, implementation, and evaluation. Liaison with professionals and/or community members with knowledge of particular subgroups can also assist in ensuring that an organisation is equipped to deal with a subgroup and, if necessary, assist with individual adolescent clients.

4.4 Conclusions

The preceding chapters describe the epidemiology, aetiology, and consequences, of problematic adolescent substance use. Adolescents who use substances in a seriously dysfunctional manner are a minority of the population who, through the cumulative impact of a variety of factors, find that many domains of their lives are affected by, and affect, their substance-use behaviour. Services aimed at reducing the harmful consequences of substance use among adolescent clients need to think broadly, addressing each of the factors that contribute to the harmful substance use; supporting factors that discourage or prevent harmful substance use; as well as rectifying the multitude of other problems that are also evident.

4.5 References

1. Cavaiola, A. & Kane-Cavaiola, C. (1989) Basics of adolescent development for the chemical dependency professional, in: Henry, P. (Ed.) *Practical approaches in treating adolescent chemical dependency: a guide to clinical assessment and intervention*, pp. 11-24 (New York, Hawthorne Press).
2. Elkind, D. (1985) Egocentrism redux, *Developmental Review*, 5, pp. 218-26.
3. Moore, S. & Rosenthal, D. (1992) Australian adolescents' perceptions of health-related risks, *Journal of Adolescent Research*, 7, pp. 177-91.
4. Collins, J. (1993) Future challenges for behavioural research in adolescent health, *Journal of Paediatric and Child Health*, 29, pp. S66-S71.
5. Greenberg, B. (1992) Issues in adolescent treatment *Proceedings of the 13th World Conference of Therapeutic Communities, Athens: 1990*, pp. 103-6 (Athens, World Conference of Therapeutic Communities).
6. Havighurst, R. J. (1972) *Development tasks and education* (New York, McKay).
7. Heaven, P. (1994) *Contemporary adolescence: a social psychological approach* (South Melbourne, MacMillan Education Publishing).
8. Newman, B. & Newman, P. (1987) *Adolescent development* (Columbus, Merrill Publishing Company).
9. Erikson, E. (1967) *Childhood and society* (Hamondsworth, Penguin).
10. Miller, R. (1992) An evaluation of the process of treatment in a residential program for adolescent drug abusers *School of Behavioural Sciences* (Sydney, Macquarie University).
11. Hooker, K. (1991) Developmental tasks, in: Lerner, R., Petersen, A. & Brooks-Gunn, J. (Eds.) *Encyclopedia of adolescence* (New York, Garland Publishing).
12. Coleman, J. (1989) The focal theory of adolescence, in: Hurrelmann, K. & Engel, U. (Eds.) *The social world of adolescents: international perspectives* (Berlin, de Gruyter).
13. Coleman, J. & Hendry, L. (1990) *The nature of adolescence* (London, Routledge).
14. Snyder, W. & Ooms, T. (1992) Introduction and overview, in: Snyder, W. & Ooms, T. (Eds.) *Empowering families, helping adolescents: family centred treatment of adolescents with alcohol, drug abuse and mental health problems. Treatment Improvement Protocol Series Number 6*, pp. 1-10 (Rockville, Center for Substance Abuse Treatment).
15. Friedman, A. & Glickman, N. (1986) Program characteristics for successful treatment of adolescent drug abuse, *Journal of Nervous and Mental Disease*, 174, pp. 669-79.
16. Prochaska, J. & Diclemente, C. (1984) *The transtheoretical approach: crossing traditional boundaries of therapy* (Homewood, IL, Dow Jones Irwin).
17. Friedman, A., Granick, S. & Kreisher, C. (1994) Motivation of adolescent drug abusers for help and treatment, *Journal of Child and Adolescent Substance Abuse*, 3, pp. 69-88.
18. De Leon, G., Melnick, G., Kressel, D. & Jainchill, N. (1994) Circumstances, motivation, readiness, and suitability (the CMRS Scales): predicting retention in therapeutic community treatment, *American Journal of Drug and Alcohol Abuse*, 20, pp. 495-515.
19. Miller, W. & Rollnick, S. (1991) *Motivational interviewing: preparing people to change addictive behavior* (New York, Guilford Press).
20. Holland, S. & Griffin, A. (1984) Adolescent and adult drug treatment clients: patterns and consequences of use, *Journal of Psychiatric Drugs*, 16, pp. 79-89.

21. De Leon, G. & Deitch, D. (1985) Treatment of the adolescent substance abuser in a therapeutic community, in: Friedman, A. & Beschner, G. (Eds.) *Treatment services for adolescent substance abusers*, pp. 216-230 (Rockville, MD, US Department of Health and Human Services).
22. West, R. & Power, D. (1995) Alcoholics' beliefs about responsibility for, and recovery from, their condition, *Drug and Alcohol Review*, 14, pp. 55-62.
23. Bukstein, O. & Kaminer, Y. (1994) The nosology of adolescent substance abuse, *American Journal on Addictions*, 3, pp. 1-13.
24. Mattick, R. & Torres, M. (1995) Third national census of clients of treatment agencies (National Drug and Alcohol Research Centre).
25. Myers, M. & Brown, S. (1990) Coping and appraisal in potential relapse situations among adolescent substance abusers following treatment, *Journal of Adolescent Chemical Dependency*, 1, pp. 95-115.
26. Alder, C. & Read, H. (1992) *The re-integration problems of drug using young offenders. Mational Campaign Against Drug Abuse Monograph Series No. 23* (Canberra, Australian Government Publishing Service).
27. Dryfoos, J. (1990) *Adolescents at risk. Prevalence and prevention* (Oxford, Oxford University Press).
28. Ensminger, M., Brown, C. & Kellam, S. (1982) Sex differences in antecedents of substance use among adolescents, *Journal of Social Issues*, 38, pp. 25-42.
29. Swan, N. (1995) Early childhood behavior and temperament predict later substance use, *NIDA Notes*, 10, pp. 13-15, 18.
30. Broom, D. (1994) Double bind: women affected by alcohol and other drugs (Sydney, Allen & Unwin).
31. Copeland, J. (1994) 'What's a nice girl like you doing in a place like this?' Meeting the treatment needs of women, in: Ross, J. (Ed.) *Health for all? Social justice issues in the alcohol and other drug field: proceedings from the sixth National Drug and Alcohol Research Centre annual symposium, December 1993*, pp. 72-91 (Sydney, National Drug and Alcohol Research Centre, University of New South Wales).
32. Copeland, J. & Swift, W. (1994) 1994 National Women and Drugs Conference: Challenge, Consensus and Change Issues Papers. Research Grant Report Series B94/4 (Sydney, New South Wales Drug and Alcohol Directorate).
33. Copeland, J. & Hall, W. (1995) *Women and drug dependence: an overview for clinicians, policy makers and researchers* (Sydney, National Drug and Alcohol Research Centre, University of New South Wales).
34. Swift, W., Copeland, J. & Hall, W. (1996) *Characteristics and treatment needs of women with alcohol and other drug problems: results from an Australian national survey* (Canberra, Australian Government Publishing Service).
35. Pols, R. & Hawks, D. (1992) *Is there a safe level of daily consumption of alcohol for men and women?* (Canberra, Australian Government Publishing Service).
36. Hill, S. (1983) Vulnerability to the biomedical consequences of alcoholism and alcohol-related problems among women, in: Wilsnack, S. & Beckman, L. (Eds.) *Alcohol problems in women* (New York, Guilford Press).
37. Baily, S., Saunders, W., Phillips, M. & Allsop, S. (1991) *Pathways to survival: the influence of gender in alcohol relapse. Technical report prepared for the Research into Drug Abuse Advisory Committee, Department of Health, Housing and Community Services, Commonwealth of Australia* (Perth, Addiction Studies Unit, Curtin University of Technology).
38. Broom, D. & Stevens, A. (1992) Doubly deviant: women using alcohol and other drugs, *International Journal on Drug Policy*, 2, pp. 25-7.
39. Barnard, M. (1993) Needle sharing in context: patterns of sharing among men and women injectors and HIV risks, *Addiction*, 88, pp. 805-12.
40. Gossop, M. (1976) Drug dependence and self-esteem, *International Journal of the Addictions*, 11, pp. 741-53.
41. Miller, B. (1990) The interrelationships between alcohol and drugs and family violence. *National Institute on Drug Research Monograph Series, No 103*, pp. 177-207 .
42. Moise, R., Reed, B. & Ryan, V. (1982) Issues in the treatment of heroin addicted women: a comparison of men and women entering two types of drug abuse programs, *International Journal of the Addictions*, 17, pp. 109-39.

43. Hurley, D. (1991) Women, alcohol and incest: an analytical review, *Journal of Studies on Alcohol*, 52, pp. 253-62.
44. Gomberg, E. (1987) Shame and guilt issues among women alcoholics, *Alcoholism Treatment Quarterly*, 4, pp. 139-55.
45. Gomberg, E. (1988) Alcoholic women in treatment: the question of stigma and age, *Alcohol and Alcoholism*, 23, pp. 507-14.
46. Beschner, G. & Treasure, K. (1979) Female adolescent drug use, in: Beschner, G. & Friedman, A. (Eds.) *Youth drug abuse. Problems, issues, and treatment*, pp. 169-212 (Lexington, MD, Lexington Books, Heath and Company).
47. Maher, L. (1994) Drug-related issues for women and girls in custody, in: Copeland, J. & Swift, W. (Eds.) *1994 National Women and Drugs Conference: Challenge, Consensus and Change: issues papers. Research Grant Report Series B94/4*, pp. 2-64 (Sydney, New South Wales Drug and Alcohol Directorate).
48. Biddulph, S. (1995) *Manhood* (Sydney, Finch Publishing).
49. Reed, B. (1985) Drug misuse and dependency on women: the meanings and implications of being considered a special population or minority group, *International Journal of the Addictions*, 20, pp. 13-62.
50. Murphy, L. & Rollins, J. (1980) Attitudes towards women in co-ed and all female drug treatment programs, *Journal of Drug Education*, 10, pp. 319-23.
51. Boland, C. & Gilmore, K. (1984) Women in treatment: meeting the needs of substance dependent women, *Substance Abuse Monthly*, 5, pp. 22-8.
52. Sirilas, H. (1992) A survey of clients of the women's program of Drug Services Victoria, in: Ribton-Turner, D. & McDonald, K. (Eds.) *Report of the Review and Evaluation of the Women's Program* (Melbourne, Drug Services Victoria).
53. Trad, P. (1993) Substance abuse in adolescent mothers: strategies for diagnosis, treatment and prevention, *Journal of Substance Abuse Treatment*, 10, pp. 421-31.
54. Chaney, E. (1989) Social skills training, in: Hester, R. & Miller, W. (Eds.) *Handbook of alcoholism treatment approaches. Effective alternatives.*, pp. 206-21 (New York, Pergamon Press).
55. Blume, T., Green, S., Joanning, H. & Quinn, W. (1994) Social role negotiation skills for substance-abusing adolescents: a group model, *Journal of Substance Abuse Treatment*, 11, pp. 197-204.
56. Australian Bureau of Statistics (1993) *New South Wales' young people: a statistical profile* (Sydney, Australian Bureau of Statistics).
57. Spathopoulos, E. & Bertram, S. (1991) *Drug and alcohol research amongst non-English speaking background communities in Australia: literature review* (Sydney, New South Wales Department of Health).
58. Jackson, N. & Flaherty, B. (1994) Meeting the multicultural challenge in the alcohol and other drug field, in: Ross, J. (Ed.) *Health for all? Social justice issues in the alcohol and other drug field: Proceedings from the Sixth National Drug and Alcohol Research Centre annual symposium, December 1993*, pp. 32-45 (Sydney, National Drug and Alcohol Research Centre, University of New South Wales).
59. Longshore, D., Hsieh, S. & Anglin, M. (1993) Ethnic and gender differences in drug user's perceived need for treatment, *International Journal of the Addictions*, 28, pp. 539-58.
60. Cain, M. (1994) *Juveniles in detention - special needs groups: young women, Aboriginal and Indo-Chinese detainees* (Sydney, New South Wales Department of Juvenile Justice. Information and Evaluation Series No. 3).
61. Kurtines, W. & Szapocznik, J. (1995) Cultural competence in assessing Hispanic youths and families: challenges in the assessment of treatment needs and treatment evaluation for Hispanic drug-abusing adolescents, in: Rahdert, E. & Czechowicz, D. (Eds.) *Adolescent drug abuse: clinical assessment and therapeutic interventions*, pp. 172-89 (Rockville, MD, National Institute on Drug Abuse).
62. Kruks, G. (1991) Gay and lesbian homeless/street youth: special issues and concerns, *Journal of Adolescent Health*, 12, pp. 515-8.
63. Hammelman, T. (1993) Gay and lesbian youth: contributing factors to serious attempts or considerations of suicide, *Journal of Gay and Lesbian Psychotherapy*, 2, pp. 77-89.
64. Rotheram-Borus, M. (1994) Suicidal behavior and gay-related stress among gay and bisexual male adolescents, *Journal of Adolescent Research*, 9, pp. 498-508.

65. Remafedi, G. (1994) *Death by denial: studies of suicide in gay and lesbian teenagers* (Boston, MA, Alyson Publications Incorporated).
66. Brady, M. (1991) Psychoactive substance use among young Aboriginal Australians, *Contemporary Drug Problems*, Summer, pp. 273-329.
67. Brady, M. (1991) *The health of young Aborigines. A report on the health of Aborigines aged 12 to 25 years prepared for the National Youth Affairs Research Scheme* (Canberra, Australian Institute of Aboriginal and Torres Strait Islander Studies).
68. Hunter, E. (1992) Aboriginal adolescents in remote Australia *Breaking out: challenges in adolescent mental health in Australia*, pp. 80-100 .
69. De La Rosa, M. & Recio-Adrados, J. (1993) Drug abuse among minority youth: advances in research and methodology *NIDA Research Monograph* (Rockville, MD, National Institute on Drug Abuse).
70. Brady, M. (1992) *Heavy metal: the social meaning of petrol sniffing in Australia* (Canberra, Aboriginal Studies Press).
71. O'Halloran, A. (1990) *Don't pressure me. A report by the Youth Accommodation Group on the needs of drug and alcohol affected young people in the ACT* (Canberra, Youth Accommodation Group).
72. National Aboriginal Health Strategy Working Party (1989) *A national aboriginal health strategy* (Canberra, National Aboriginal Health Strategy Working Party).
73. Burns, C., D'Abbs, P. & Currie, B. (1995) Patterns of petrol sniffing and other drug use in young men from an Australian Aboriginal community in Arnhem Land, Northern Territory, *Drug and Alcohol Review*, 14, pp. 159-69.
74. Hill, P. & Murphy, G. (1992) Cultural identification in Aboriginal and Torres Strait Islander AIDS education, *Australian Journal of Public Health*, 16, pp. 150-7.
75. Kearins, J. (1985) Cross-cultural misunderstandings in education, in: Pride, J. (Ed.) *Cross-cultural encounters: communication and mis-communication*, pp. 65-80 (Melbourne, River Seine Publications).
76. Bukstein, O., Brent, D. & Kaminer, Y. (1989) Comorbidity of substance abuse and other psychiatric disorders in adolescents, *American Journal of Psychiatry*, 146, pp. 1131-41.
77. Young, S., Mikulich, S., Goodwin, M. *et al.* (1995) Treated delinquent boys' substance use: onset, pattern, relationship to conduct and mood disorders, *Drug and Alcohol Dependence*, 37, pp. 149-62.
78. Keller, M., Lavori, P., Beardslee, W. *et al.* (1992) The disruptive behavioral disorder in children and adolescents: comorbidity and clinical course, *Journal of the American Academy of Child and Adolescent Psychiatry*, 31, pp. 204-9.
79. Reilly, J., Herrman, H., Clarke, D., Neil, C. & McNamara, C. (1994) Psychiatric disorders in and service use by young homeless people, *Medical Journal of Australia*, 161, pp. 429-32.
80. Kaminer, Y. (1991) The magnitude of concurrent psychiatric disorders in hospitalised substance abusing adolescents, *Child Psychiatry and Human Development*, 22, pp. 89-95.
81. Kaminer, Y. (1994) *Adolescent substance abuse: a comprehensive guide to theory and practice* (New York, Plenum Medical Book Company).
82. Burke, K., Burke, J., Regier, D. & Rae, D. (1991) Age at onset of selected mental disorders in five community populations, *Archives of General Psychiatry*, 47, pp. 511-8.
83. McGee, R., Feehan, M. & Williams, S. (1995) Long-term follow-up of a birth cohort, in: Verhulst, F. & Koot, H. (Eds.) *The epidemiology of child and adolescent psychopathology*, pp. 367-84 (Oxford, Oxford University Press).
84. Kaminer, Y., Tarter, R., Bukstein, O. & Kabene, M. (1992) Comparison between treatment completers and noncompleters among dually diagnosed substance-abusing adolescents, *Journal of American Child and Adolescent Psychiatry*, 31, pp. 1046-9.
85. Walker, R. (1992) Substance abuse and B-cluster disorders II: treatment recommendations, *Journal of Psychoactive Drugs*, 24, pp. 233-41.
86. Howard, J. (1995) Dual diagnosis in adolescent substance use: assessment and management, Paper presented at the *Adolescents, alcohol and other drugs: interventions in the '90s*, Sydney.
87. Salloum, I., Moss, H. & Daley, D. (1991) Substance abuse and schizophrenia: impediments to optimal care, *American Journal of Drug and Alcohol Abuse*, 17, pp. 321-36.
88. Rounsaville, B., Kosten, T., Weissman, M. & Kleber, H. (1986) Prognostic significance of psychiatric disorders in treated opiate addicts, *Archives of General Psychiatry*, 43, pp. 739-45.
89. El-Guebaly, N. (1990) Substance abuse and mental disorders: the dual diagnoses concept,

Canadian Journal of Psychiatry, 35, pp. 261-7.
90. Dansky, B., Brady, K. & Roberts, J. (1994) Post-traumatic stress disorder and substance abuse: empirical findings and clinical issues, *Substance Abuse*, 15, pp. 247-57.
91. Stewart, M. (1994) Adolescents in a therapeutic community: treatment implications for teen survivors of traumatic experiences, *Journal of Psychoactive Drugs*, 26, pp. 409-19.
92. Kilpatrick, D., Veronen, L. & Best, C. (1985) Factors predicting psychological distress in rape victims, in: Figley, C. (Ed.) *Trauma and its wake*, pp. 113-41 (New York, Brunner/Mazel).
93. Krystal, H. (1978) Trauma and affects, *Psychoanalytic Study of Children*, 33, pp. 81-116.
94. Van der Kolk, B. & Saporta, J. (1993) Biological response to psychic trauma, in: Wilson, J. & Raphael, B. (Eds.) *International Handbook of Traumatic Stress Syndromes*, pp. 25-33 (New York, Plenum Press).
95. Jarvis, T., Copeland, J. & Walton, L. (1995) *Exploring the nature of the relationship between child sexual abuse and substance use among women* (Sydney, National Drug and Alcohol Research Centre, University of New South Wales).
96. Howard, J. (1994) Irrelevant, unapproachable or boring: treatment issues for drug-using youth, in: Ross, J. (Ed.) *Health for all? Social justice issues in the alcohol and other drug field. Proceedings from the Sixth National Drug and Alcohol Research Centre annual symposium, December 1993*, pp. 92-119 (Sydney, National Drug and Alcohol Research Centre, University of New South Wales).
97. Gorski, T. (1991) Recovery: a developmental model, *Addiction and Recovery*, pp. 10-4.
98. Zibert, E., Hando, J. & Howard, J. (1994) *Patterns of drug use and indicators of harm among persons detained in New South Wales Juvenile Justice centres 1993* (Sydney, Department of Juvenile Justice).
99. Crundall, I. (1989) *Drug use among youth in government custody* (Melbourne, Victorian Health Department).
100. Kosky, R., Sawyer, M. & Gowland, J. (1990) Adolescents in custody: hidden psychological morbidity?, *Medical Journal of Australia*, 153, pp. 24-7.
101. Krupinski, J. (1985) Drug abuse and juvenile delinquency, in: Borowski, A. & Murray, J. (Eds.) *Juvenile Delinquency in Australia*, pp. 154-67 (Melbourne, Methuen Australia).
102. National Health and Medical Research Council (1992) *Health needs of homeless youth* (Canberra, Australian Government Publishers).
103. Human Rights and Equal Opportunity Commission (1989) *Our homeless children. Report of the National Inquiry into Homeless Children* (Canberra, Australian Government Publishing Service).
104. O'Connor, I. (1988) *Our homeless children: their experiences. Report to the national inquiry into homeless children* (Brisbane, University of Queensland Press).
105. Howard, J. (1993) Taking a chance on love: risk behaviour of Sydney street youth, *Journal of Paediatric Child Health*, 29, pp. S60-5.
106. Hirst, C. (1989) *Forced exit - A profile of the young and homeless in inner urban Melbourne. Report of the Salvation Army youth homelessness policy development project* (Melbourne, Salvation Army).
107. Forst, M. (1994) A substance use profile of delinquent and homeless youth, *Journal of Drug Education*, 24, pp. 219-31.
108. Coleman, A. (1995) Trying to get out of it: the drug and alcohol issues of young homeless and at risk people in central Brisbane (Brisbane, Brisbane Youth Service).
109. Sturmey, R. (1994) Rural/remote women: drugs and alcohol, in: Copeland, J. & Swift, W. (Eds.) *1994 National Women and Drugs Conference: Challenge, Consensus and Change: issues papers*, pp. 99-151 (Sydney, New South Wales Drug and Alcohol Directorate).

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10 Synthesis: implications for service planning and delivery

In this chapter, the principles that appear to be most important for services that aim to assist adolescents to manage their substance use is collated.

10.1 Program delivery model

No single service delivery model has been shown to be superior in adolescent drug treatment. The feedback from workers indicates that a variety of models are required to deal with the variety of adolescents with substance-use problems. It is beyond the scope of this project to develop a formula for calculating exactly what mix of services is required for any geographic area. Nor is there sufficient information on which to create such a formula. Rather, it could be pertinent to discuss 'treatment matching'. Reliable guidelines for matching adolescent clients to treatments, based upon sound research, do not exist to date. [1, 2] However, on the basis of the combined opinions of clinicians, researchers, and managers of adolescent treatment programs, Schonberg has outlined how client assessment data can be used to match clients to treatment: [3]

Pretreatment services	1.	primary prevention
	2.	early intervention
Outclient treatment:	1.	non-intensive: less than 9 hours per week
	2.	intensive: 9 to 20 hours per week
	3.	day treatment partial hospital: more than 20 hours per week
Residential treatment	1.	medically monitored intensive inpatient: 24-hour a day medical monitoring and treatment for 7 to 45 days
	2.	intensive residential: professionally or medically directed therapeutic community style treatment, 6 to 24 months
	3.	residential psychosocial care: professionally directed therapeutic community style treatment, heavily reliant on peer pressure, 6 to 24 months
	4.	halfway house: minimal treatment within the house, supervised
	5.	group home/group living: no treatment and minimal supervision.

This list of forms of treatment is not an exhaustive list of the range of services that can assist adolescents to manage their substance use. For example, other types of service are drop-in centres and short-term (2-week) residential programs. An extract from Schonberg's table on treatment matching is presented in Table 10.1 to highlight how a range of factors need to be considered when considering the type of program that is required for a client. The treatment options presented in Table 10.1 have been selected because they are the main treatment options available in Australia.

While Schonberg's schema could be useful, it makes no mention of the adolescent's wishes or readiness to change. While an objective assessment might indicate the need for residential treatment, the adolescent might only be willing to attend a drop-in centre to get practical assistance with some specific problems. The adolescent's perspective must be respected. However, while attending the drop-in centre, an opportunity exists for workers to encourage the adolescent to seek further help with substance-use problems.

Unfortunately, however, with the current lack of assessment procedures and service

options, such careful treatment matching is rarely applied. Adolescents tend to go to services that happen to be close or that happen to have a space, rather than the service that would best suit their specific needs.

Table 10.1: Indicators for treatment matching (adapted from Schonberg, 1993)

Toxicity / withdrawal	Medical	Intrapersonal	Interpersonal	Environmental	Type of treatment
Problems resulting from use; no current use, or low to moderate use without anticipated withdrawal	Problems resulting from use; no current use, or low to moderate use without anticipated withdrawal	Fewer effective coping skills; less competent emotional/cognitive functioning; still able to function in a non-structured setting	Identified deficiencies in relationships with significant others, and history of AOD and/or other risk-related behaviours that increase the potential for developing PSUD (psychoactive substance use disorder); able to function in a non-structured setting	Environmental/contextual factors affect the individual, but do not warrant removal from current living situation; needs to be supported by minimal treatment	Outpatient treatment
Detoxification services not required	No special medical services required on site	Dysfunctional coping skills; emotional/ cognitive/ psychiatric impairment; requires supervision in structured setting, activities of daily living (ADL) services and other psychosocial rehabilitation	Dysfunctional relationships and behaviours which do not pose an immediate threat to self and/or others, but which require behaviour management within a structured setting that provides	Environmental/contextual factors dictate individual must be removed from adverse influences of the current living situation	Residential psycho-social care

Table 10.1: Indicators for treatment matching (adapted from Schonberg, 1993)

Toxicity / withdrawal	Medical	Intrapersonal	Interpersonal	Environmental	Type of treatment
			supervision, ADL, and other psychosocial rehabilitation		
Detoxification services not required	Medical conditions that can be handled with outpatient medical management and/or which do not require life support/intensive treatment services	Dysfunctional coping skills; emotional / cognitive / psychiatric impairment; requiring long-term residential treatment including psychiatric and ADL	Dysfunctional relationships and behaviours which do not pose an immediate threat to self and/or others, but require 24-hour structured care that includes ADL services, but may not require psychiatric services; behaviour manageable within a structured setting	Environmental/ contextual factors dictate individual must be removed from adverse influences of the current living situation	Intensive residential treatment
Detoxification services not required	No special medical services required on site	Adequate coping skills; has moderate to high level of emotional/cognitive functioning, but requires some supervision	Ability to establish prosocial relationships that support recovery; able to self-regulate behaviour with minimal structure / supervision.	Environmental/ contextual factors dictate individual must be removed from current living situation or other adverse circumstances	Half-way house

10.2 Program philosophy

A program philosophy can be seen as a general principal that underlies program planning.

Principles that were repeatedly promoted throughout the course of this study were that programs need to have an approach that:

- is holistic or comprehensive
- encompasses harm-reduction
- is appropriate for adolescents.

Treatments that looked only at the issue of substance use were seen to be ethically negligent and ineffective. All components of this study: the literature review, consultations with service providers and with the target group highlighted the breadth and extent of concurrent problems that adolescents with problems with substance use face. Whether it be practical problems such as accommodation or legal problems; or long-term pre-existing problems, such as childhood sexual abuse or family dysfunction, adolescents cannot be expected to manage their substance use while other issues are not resolved, particularly when the presence of those other issues could contribute to relapse.

Just as programs need to address the range of problems facing adolescent clients (that is, be holistic), they also need to have a comprehensive range of appropriate strategies to deal with those problems. For example, advocacy, support, and referral, might assist some practical problems, counselling may assist some emotional problems, and skills-training might assist some learning deficits. No single strategy can address all of the problems.

The concept of harm-minimisation has infiltrated the thinking of services, as well as adolescent clients. While abstinence is still a valuable treatment goal, most adolescents are not ready to completely change their lives, friends, and self-image. Furthermore, given the volatility of adolescents, a long-term goal of abstinence could be unrealistic. Even if abstinence is a goal, attention needs to be paid to harm-minimisation interventions to assist adolescents if they lapse.

Adult services tended not to be appropriate for adolescents. Adolescents differ in maturity, their experience base, and their immediate needs compared to adults. Service planning must incorporate an appreciation of how adolescents differ from adults.

10.3 Program issues

A number of issues that apply to all adolescent services were raised by the information sources of this study. Firstly, adolescents are not adults. They need time to play, to mature, to address their developmental needs and they need to be nurtured and cared for. They cannot be expected to be as self-suffient as an adult, nor to be able to take on as much responsibility. On the other hand, adolescents are not children and they resent being treated like children. This delicate balance is difficult for any parent dealing with an adolescent child; it is more difficult for a worker dealing with an adolescent with developmental, emotional, behavioural, and other issues.

Second, treatment is a process, not an event. Clients learn and change as they are ready and able to do so, and they are highly likely to go backwards, as well as forwards, as they progress. Services that assume that the effect of a single intervention or period of treatment fixes all of the client's problems for the rest of their lives are setting themselves and the client up for failure. Adolescents need help throughout adolescence and often into early adulthood. After-care and continuity of treatment throughout the service system are essential for retaining any progress that has been made, and for building upon that progress.

Third, substance use serves a function for adolescents. Where substance use is to deal with boredom, providing and encouraging positive drug-free activities can be useful. Where substance use is used to deal with emotions or problems, other methods for dealing with emotions or problems can be trialled. Activities that teach anger control, problem-solving skills, social skills, communication skills, and so on, can be helpful, depending upon the specific deficits of each client. Where substance use defines an adolescent's self-image, other non-substance-dependent personae can be trialled in a safe environment. If nothing is given to fill the void left by the cessation or reduction of problematic substance use, clients are highly likely to fill that void with what they have always filled it: problematic substance use.

Fourth, service providers consistently reported that rules and boundaries were among

the most important components of a program for client outcome, even though the clients complained about them. This observation was verified by the target group consultations, during which adolescents constantly complained about rules and boundaries. Services varied in the strictness of rules and the amount of freedom that clients were granted. As would be expected, residential services had much more detailed rules and stricter rule enforcement than non-residential services. An impression from the consultation process is that adolescent participation in the development, implementation and review of rules can result in more compliance with rules and greater understanding of what the rules are for. That is, it might be preferable if rules and entitlements be negotiated with clients at each particular service. Furthermore, rules should be dynamic, changing as the clients change.

Fifth, it is important to not label adolescents who use substances in a maladaptive manner. Admission to a 'drug-treatment agency', and being labelled as an 'addict' can create or can perpetuate a substance-related self-identity. Given that holistic services have been advocated, there is no reason why 'adolescent drug-treatment agencies' cannot be called something like 'adolescent life-management programs', even if those programs do cater for adolescent substance abusers/dependents.

Finally, networking and collaboration among services is particularly essential for adolescent services because a) no single service can contain everything that an adolescent with substance-use problems is likely to need at any one time, let alone over time, b) case management is impossible without a system of cooperation and c) adolescents have a tendency to move from service to service. At present there is no common protocol for assessment, no arrangement for collaboration, and insufficient cooperative effort, for individual clients. As clients drift from service to service, information has to be re-collected and adolescents tire of having to repeatedly tell their story.

10.4 Program objectives

Gone are the days when abstinence was the only treatment goal and the only indicator of success for a drug-treatment program. In line with the harm-minimisation model, focus has shifted from abstinence to reducing specific harmful or risky behaviours such as needle-sharing or problematic patterns of use. In line with the holistic focus, attention is also placed upon addressing the range of health and welfare problems of adolescents with substance-use problems such as increasing their educational level, vocational experience and living skills, and decreasing their involvement in criminal/antisocial activities.

It is not appropriate to list the desirable or essential objectives an adolescent drug-treatment program should have. What is important is that treatment objectives are based upon a) thorough assessment (as per Chapter 5), b) knowledge of what is valuable for adolescent drug treatment, c) consideration for what is achievable, particularly in light of the client's readiness to change, and d) the informed opinion and wishes of the client. From these sources of information, a case plan with client-specific objectives can be set. Using generic planning principles, goals, objectives and strategies need to be specified. Long-term goals might include keeping out of juvenile detention, living happily with the family, and/or not being out of it every day. However, program objectives should be concrete and achievable in the short term. For example, objectives could include improving specific skills (for example, decision making, communication, assertiveness, and relapse prevention) and/or finding accommodation. Some medium-term goals can be stated and reviewed as progress is made towards achievement of the short-term objectives.

10.5 Program content

It is unlikely that any program can include all of the components that are necessary to deal with all of the problems facing adolescents with substance-related problems. Furthermore, programs differ in the necessary or desirable program components as a function of factors such as their target client group and the existence of other services in the vicinity. Following is an outline of the range of components that might be considered ideal in a service that aims to deal with all of the issues that are likely to arise with adolescent clients.

Strategies relating to family and peers are essential for ensuring ongoing support outside the community, as well as for addressing immediate issues. Programs that foster the development of positive interactions and relationships with non-substance-abusing peers can help with the development and maintenance of a new identity and social life that do not revolve around substances.

Family programs could be directed towards resolving family conflict, improving family functioning, and/or facilitating the family to support the adolescent. With regard to the latter goal, a broad definition of 'family' is particularly recommended, as a surrogate family could be the source of support. For those in a significant relationship, therapy for couples might be more appropriate.

Physical and other recreational activities are necessary for a number of reasons. Many adolescent clients have been living a lifestyle that makes them think that they are grown-up, but they are usually still at the developmental level of chronologically younger adolescents. They have missed out on having fun and it is a good way to remind them that they are still 'kids' and to instil a (perhaps lost) sense of hopefulness. Positive non-substance-induced experiences are also seen by adolescents as useful in a therapeutic way; many have forgotten, or never knew, how to feel good without substances.

Services for dealing with the range of issues that accompany substance misuse, whether they be causal, consequential, or correlational (for example, child sexual abuse, psychological problems, or medical problems) need to be available, either directly or via referral. It has been suggested that accompanying an adolescent to a referral is preferable because many adolescents are uncomfortable about going to a new service and often do not turn up.

Practical assistance (for example, organise or provide accommodation) can be provide incentive for adolescents to seek help as they are generally more concerned about practical needs than lifestyle change; this can remove barriers to treatment-seeking or to the effectiveness of treatment; and can also be a means of developing rapport and trust so that the worker is in a position to encourage lifestyle change.

Mechanisms/strategies for behaviour modification (for example, a reward or levels system) could be necessary, particularly given that many adolescent clients already have a criminal history and/or behavioural disorder.

Skills-development programs (for example, social skills, communication skills, living skills) and cognitive restructuring can enable adolescents to function effectively in life without resorting to substance use; these are particularly necessary for helping adolescents who have missed the opportunity to develop skills and/or have developed dysfunctional thinking patterns as a result of their substance use. Such programs should follow a written protocol and have structure.

Educational and vocational programs can give adolescents a sense of control and purpose during, and after, the program.

Counselling is useful if it is conducted by a skilled counsellor.

Outreach is useful for attracting adolescents into a program before they are coerced to do so. Outreach is also a useful mechanism for networking among services and providing an opportunity for training generalist youth workers in adolescent substance abuse issues.

Graduated withdrawal and structured, scheduled after-care, are seen as essential, not optional, parts of a program.

Monitoring and evaluation are essential for assisting program managers to improve or to maintain the appropriateness and effectiveness of their services.

Many of the above recommendations are consistent with those of a report on services required for adolescents with substance-related problems. [4] Most interventions can be implemented in a group context with greater cost-efficiency as well as greater effectiveness, as the group provides a number of benefits such as opportunities to practise and receive feedback on skills learnt.

10.6 Program duration

Adolescents with substance-use problems need ongoing assistance, not just a discrete program. This ongoing assistance might include participation in a series of discrete programs. However, no single program inoculates them against further need for help. Just as any adolescent needs parental guidance, so too do adolescents with substance-use problems, even more so.

10.7 Adolescent participation

Adolescents want and need to participate in the program rather than being just told what to do. Their involvement in setting rules, program development, their own treatment plan, and so on, ensures they have commitment to the program and this assists the program to meet their needs.

10.8 Accessibility

Preference has been expressed by service providers and the target group for a lot of small services, geographically dispersed so that a) adolescents can be close to their community and family supports and services that will support them after contact with the program finishes and b) services do not have a large institutional feel or approach. It is particularly important that rural adolescents have access to programs that can either directly deal with their substance problems or link in with distant treatment programs.

Consideration should also be given to service provision during the evenings, the middle of the night and weekends on a casual or crisis basis. Services that do not respond to immediate needs can lose an opportunity to engage adolescents in treatment.

10.9 Appropriateness for all

There seems to be little support for a principle of specific programs for specific groups, particularly as there are so many overlapping subgroups of adolescents that such a principle would be impractical. While no program can be all things to all people, training of staff members and program policies need to ensure that programs can be as attractive and appropriate as possible to all potential clients.

In particular, consultations with the target group for this project indicates a preference for mixed-gender services. Adolescent service providers consulted for this project noted that males and females together result in numerous problems, such as relationships that interfer with recovery, or with the group dynamic, and reluctance of clients to raise certain issues in groups. However, most adolescent service providers advocated including gender-specific groups in their programs, but not keeping males and females segregated. The main reason for wanting mixed-gender programs is the need to socialise the clients in an environment as similar to the outside world as possible.

On the other hand, there could be some basis for some specialised programs. In particular, specific services for those aged under 16 years are recommended as younger adolescents can require more nurturing and structure and be capable of less independence than older adolescents. Also, given the cultural intolerance that has been found to be typical among adolescent clients, gay and lesbian adolescents, indigenous Australian adolescents and adolescents from other 'cultural minorities' could benefit from specific programs that foster pride in their identity and in which discrimination and harrassment is not practised by other clients.

Attention needs to be given to who should be allowed into a program where the group dynamic is important. Will mixing with a current group be detrimental to the newcomer? Will admitting a particular person be detrimental to the current group? These questions need to be answered before admitting a client so that the program does no harm to the newcomer and the program is maximally effective for the current group.

10.10 Attractiveness

Services tend to be unattractive to adolescents: adolescents are fearful of most services, the

staff members and what they will do to them. This acts as a barrier to seeking treatment and, once in, adolescents do not want to stay in services that they do not like or do not feel comfortable in.

One component of appeal is the physical environment. Services often lack the funds to provide sufficiently large, light, well-appointed facilities in good locations. However, the physical environment needs to be appealing to avert depression and to encourage retention.

Another component of attractiveness is atmosphere. Adolescents appear to prefer a relaxed, informal, yet vibrant, ambience. As found by Brown:

> A dominant theme among the advice and experience of youth workers, drug agency personnel and others, was the need to cultivate in an agency an informal appearance and atmosphere which would project a relaxed and welcoming tone to young people. Indeed, many workers at those drug agencies which did not attract a significant number of young people, ventured that the formal, clinical appearance and character of their agency - which may well lend credibility in the minds of older clients - were very likely a potent deterrent to young people...Likewise many workers stressed that emphasis upon making and keeping appointments should be replaced with a working format which allows young people to visit without notice to obtain some service. This is a feature common to those drug agencies and youth agencies which attract large numbers of young people. [4] (p. 39)

To attract clients, services also need to be perceived as relevant, credible and confidential.

10.11 Staff

Staff members need a variety of backgrounds as there are a variety of needs that no single type of person would be likely to meet. That is, for example, the cultural, professional and gender mix of a staff team should reflect the client group's needs and backgrounds. Whatever their backgrounds, staff need to be adequately trained and supervised and psychologically mature and stable. Furthermore, adolescents are particularly concerned that the staff members care about them; supportive staff are crucial to the clients' progress.

Burn-out is a major issue in the area of drug treatment. To avoid burn-out, staff members need to be supported structurally by realistic program demands, and personally by their supervisor and other staff members. Prevention of burn-out is important not only on humanitarian grounds, but also for program effectiveness. Adolescents need to be able to rely upon staff members to be there and an abrupt departure tends to be interpreted as a betrayal. [4]

10.12 Quality assurance

Adherence to quality assurance standards is fundamentally important for any health and welfare service. For example, documented policies and procedures are crucial to the delivery of a quality service. A policy and procedures manual that outlines all program (for example, mission, philosophy), occupational (for example, staff appraisal, leave conditions, duty of care) and client (for example, client rights) policies is essential. Furthermore, the program needs to be planned, clearly documented, and implemented with fidelity. As quality assurance standards have been developed elsewhere, they have not been discussed in this report. [5]

10.13 Study limitations

The majority of the data upon which this chapter's synthesis of knowledge of best practice is based is clinical opinion. For example, while this study found support for residential treatment programs among service providers and among the client group, there is still no conclusive evidence that this high cost option is superior to a longer term, but lower intensity intervention such as supported accommodation or drop-in centres. [4]) The dearth of randomised-controlled trials means that service providers plan on the basis of (at best) educated guesses, not upon proven facts.

10.14 References

1. Gottheil, E., McLellan, A. & Druley, K. (1981) Matching patient needs and treatment methods in alcoholism and drug abuse (Springfield, IL, Charles C. Thomas).

2. McLellan, A. & Alterman, A. (1988) Patient treatment matching: a conceptual and methodological review with suggestions for future research, in: Pickens, R. W. & Svikis, D. S. (Eds.) *Biological vulnerability to drug abuse. NIDA Research Monograph No. 89*, pp. 114-35 (Rockville, MD, US Department of Health and Human Services).
3. Schonberg, S. (1993) *Guidelines for the treatment of alcohol and other drug abusing adolescents* (Rockville, MD, Center for Substance Abuse Treatment, US Department of Health and Human Services).
4. Brown, H. (1991) *Report on services required for adolescents with drug-related problems* (Prahran, Victoria, Taskforce Community Involvement Centre).
5. Griffiths, M., Rauch, A., McKeown, C., Shaw, I. & Ayre, S. (1995) First draft manual of CHASP standards for alcohol, tobacco and other drug services (Brisbane, Alcohol and Drug Branch, Queensland Department of Health).

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9 Consultations with the target group

9.1 Introduction

The objectives of the consultation with the target group were to collect information on their:

a) experience of drug-treatment services (what they did, and did not, like, what worked, what did not) and

b) ideas on what they would, and would not, like in a new service.

9.2 Study group

The target population of the consultation was youth aged 11 to 20 with a past or current psychoactive substance-use disorder, as defined by the DSM-IV [1] in New South Wales who had ever needed (or were likely to need) assistance to manage their substance use. The study population was a little broader than the target population, in that a DSM-IV diagnosis of substance abuse or substance-dependence was not required, but participants needed to have had significant problems in relation to their substance use.

As the study was intended to be a small, descriptive study, the target sample size was small (about 30 youths) and reflected practical constraints, rather than power calculations.

Consultations were monitored to ensure input from:

- females and males
- youths with problems relating to a range of substance-use problems for example, :alcohol, cannabis, amphetamine, heroin, injecting drug use
- youths with a range of treatment experiences, for example, residential and nonresidential
- youths with a range of backgrounds:
  - youths of non-English speaking background (NESB)
  - indigenous Australian youths
  - youths from rural areas
  - gay and lesbian youth
  - young offenders
  - pregnant youths
  - youths responsible for children
  - youths who had engaged in prostitution.

To be part of the study, youths needed to be not severely intoxicated at the time of interview.

9.3 Data collectors

More than half of the data collection was conducted by workers from adolescent services. Some workers from the project's advisory group volunteered to assist with data collection and service providers contacted by the survey of services were invited to assist with the consultations with the target group. These workers were encouraged to collect data in a manner that was appropriate for their agency and their clients (see below). The study research officer (Catherine Spooner) also conducted discussions with groups of youths at agencies.

9.4 Data collection

Various methods of data collection were used at the discretion of the person collecting the data. The method used was that which was judged to be most practical with the clients and structure of each service.

One method of data collection was focus group discussion because a) some youths are illiterate or have poor literacy skills so that self-completion questionnaires might not be viable for a proportion of the target group (hence introducing selection bias, as well as poor expression of concepts by those who do participate) and b) the group dynamic was expected to generate more discussion (ideas) than individual interviews or self-completion questionnaires. [2] Some

group discussions were combined with a self-completion questionnaire (participants completed the questionnaires before the group, then discussed their answers). For one group, butcher's paper was used to record responses generated via brainstorming answers to questions.

Other means of data collection were used, depending upon the preferences of the data collector: a) one-to-one structured interviews and b) self-completion questionnaire with a data collector present to answer questions. Regardless of the data collection method, all participants were asked the same questions (as much as possible).

9.5 Instruments

Interview format/questionnaire

Participants were asked the following questions:

- what do they want (as against 'need')
- what factors inhibit or encourage them to:
  - seek professional help
  - choose a particular service
  - stay with or leave a service
- what does their ideal service look like?

Participants were invited to discuss their own ideas and experiences, as well as to relate the experience of adolescents they knew (that is, broaden the range of experiences discussed and allow the third person to be used, if the participants wese reluctant to admit their own behaviours/thoughts).

Tape recorder

A tape recorder was only used for one group discussion. However, the documentation of answers before and/or during discussion made the tape-recording of answers unneccessary.

9.6 Data collation and analysis

Detailed computer analysis of the discussions was not conducted because a) specific questions were being asked and content analysis of the answers was straightforward, computerised qualitative data analysis is very time-consuming and c) there were limited resources available for data analysis. The answers to the research questions that had been recorded on the questionnaires (or butcher's paper) were entered into a word-processing package (WordPerfect 5.1). Content analysis was then conducted to ascertain main themes or categories of responses.

9.7 Results

9.7.1 Sample description

Data on every youth consulted was not obtained: in some group discussions, only the group responses were recorded, not details of each participant. Consequently, this sample description is approximate.

Approximately 38 mixed-gender youths were consulted, including youths: with problems relating to the use of a range of substances; with a range of treatment experiences; from non-English speaking, indigenous Australian, rural, and/or gay/lesbian/bisexual backgrounds; and who were young offenders, illiterate, pregnant (at least one with a child) and/or had engaged in prostitution. The age of participants ranged from 13 years to just above 20 years.

The specific substances that participants (for whom there is individual data) stated that they were having problems with were mainly cannabis, alcohol, heroin, and amphetamines. Smaller numbers mentioned inhalants, prescribed drugs, hallucinogens, and cocaine. The specific problems they were having in relation to their substance use were uncontrolled use, family problems, mental, and physical, health problems, legal problems, financial problems, and

general interference with life.

9.7.2 Responses

The decision to seek professional help

Participants stated that they had sought treatment because:

- of criminal involvement ('alternative to prison')
- they had hit rock-bottom
- of the suggestion or coercion of others, particularly family or friends
- of difficulty with managing a small child.

Participants had been put off seeking treatment as a result of:

- not wanting to stop using substances
- not wanting to be 'straight'
- not thinking there was a need to do so ('I didn't think I had a problem')
- their negative perception of treatment, for example, that it would be 'full of junkies', that they would 'get bashed up', or that they would 'be the only kid'.

Participants reported that they had heard of other adolescents not going to treatment when they might need it because they:

- lacked motivation
- did not want to associate with straight people
- did not feel they had a problem
- thought it would be too hard
- could not get into treatment.

The decision to use a particular service

When asked what made them choose the particular service they had used, there rarely appeared to be any real choice. A service was either recommended by a person in authority (counsellor, family, court), or it was the only one available. A few made a conscious choice because of a positive perception of the service.

Many actively chose not to use a particular service, stating that they heard or knew that it was too strict. A particular deterrent was a non-smoking policy.

The decision to stay with, or leave, a program

Participants were asked:

'Once in a program, what was good about that program that encouraged you to stick with it?'

Responses included:

- support from staff, other clients, and family; related to this were comments such as:
  - being able to talk and being listened to
  - being pushed just the right amount
  - groups
  - safety to deal with emotions
- the physical environment (for a residential program in bushland outside Sydney)
- fear of using
- a sense of hope of getting it together
- learning about themselves
- seeing other people clean (ex-user staff, residents, people at NA meetings)
- activities: the beach, gym, football, bushwalks.

When asked what other things services could have done to encourage them to stay, few responses were given:

- make the service more interesting
- more freedom
- more outside contact so they could learn from experience
- allow smoking.

When asked what had ever made a participant want to leave a service, responses included:

- problems with the rules (chores, no tape-player, no smoking)
- dislike of being separated from family and friends and feeling confined
- conflict with, or dislike of, staff and/or residents
- thoughts about using
- difficulty with dealing with issues in therapy
- physical environment ('closed, no feeling, needs more colour').

Reasons cited for other young people dropping out were:

- wanting to use substances
- disliking rules and being told what to do
- wanting to be with friends
- social dynamic with other residents
- being far away from home
- boredom.

Treatment access and appropriateness for all groups

Participants were asked to describe themselves in terms of gender; language background; sexuality; age; and whether or not they were indigenous Australian, pregnant, from a rural area, or had a other problems, such as psychiatric problems. They were then asked whether they had trouble getting access to treatment or had problems with a treatment service because of any of these individual characteristics.

Very few had personally experienced such problems, or knew of others who had done so. However, some problems were mentioned:

- there is a lack of services in rural areas
- service had been denied because a person was too young; youths who were aged under 16 had been seen to 'not fit in' with the older adolescents.
- gay and lesbian adolescents and adolescents from non-English speaking backgrounds (NESB) had been hassled by other clients
- participants with psychiatric problems complained about problems with access and with receiving respect by services.

Treatment experiences

Participants were asked which activities or things about services had helped them to deal with their substance problem. Most responses fell into one of two categories:

- positive drug-free experiences, particularly outings
- talking about issues and being supported.

When asked what would have made services better for them, participants mentioned:

- more freedom (including the freedom to smoke)
- more fun, less boredom
- more ability to deal with their problems other apart from their substance use problems, and with clients from different backgrounds
- workers with less 'smart-arse' attitudes
- a nicer physical environment.

Parts of services that participants described as not helpful were:

- some specific program components, for example, TAFE, conflict groups ('sometimes'), art therapy
- being told things they already knew
- the lack of freedom.

Suggested service design

Participants were asked:

'If you were to design a service that you would want to go to, you would want to stay at and would help you with drug problems, what would be the main things that it would have?'

- most felt the program should be in the country; some felt that it should be in the city
- residential programs were mentioned, there was no mention of non-residential programs
- within the service, there should be:
  - detoxification services
  - occupational and school educational components
  - recreational activities
  - a half-way house
  - graduated withdrawal from the program
  - a support group for when clients leave, including NA and AA, job assistance
- program philosophies or principles that should be incorporated into the program are that they should:
  - show that there is a better world
  - help clients work it out for themselves instead of telling them what to do
  - be non-discriminatory, exercise no prejudice
  - be confidential
  - have a harm-minimisation philosophy
- Staff should:
  - be easy-going
  - be ex-users
  - care
  - be young
- there should be more freedom, particularly to smoke
- most advocated mixed-sex programs, a few did not
- there should be more adolescent involvement in the program and in setting their own goals
- expectations on clients should not be too high
- there should be more outside contact.

Participants thought that the program should not have:

- substances
- non-smoking policy
- workers that do not understand adolescents
- strict rules
- no outside contact
- TAFE, morning groups
- mixed-gender/girls.

9.8 Discussion

The sample of the consultation process included a cross-section of young people with problems with managing their substance use and treatment service users. Questions about what they needed and wanted in treatment services were often difficult for the participants to answer because they either never *wanted* treatment in the first place or their experience of treatment was so limited that they did not have a broad repertoire of experience from which to draw. A few main issues, however, did recur and appeared to be important for the target group:

Freedom and rules

There were consistent complaints about rules: that there were too many, that they were not necessary, that they did not allow adolescents the chance to make their own decisions and mistakes.

Adolescent involvement:

Adolescents wanted to set their own goals and have input into the program. This also relates to the issue of rules mentioned above.

Fun and recreation

Fun and recreation were seen as important to alleviate boredom and allow the clients to be kids; lack of fun was a significant factor in dropout. However, it was also seen as

important because it provided drug-free positive experiences that gave the message that life could be fun without substance use.

Readiness or willingness to be straight

A major barrier to motivation to change was that substance using was functional: it was fun and integral to self-identity and peer acceptance. The youths consulted appeared to perceive treatment as being synonymous with loss and total abstinence. Allowing clients to set their own goals and to make small changes that they are ready to make could reduce this barrier for those who are not yet wanting to make major life changes. In fact, some youths specifically advocated the concept of harm-minimisation.

Staff characteristics

Program staff members are an essential component of the treatment experience, perhaps more important than program content. They are important as role-models, therapists, and friends, to adolescent clients. Participants tended to favour ex-users because of their knowledge and understanding of what the client was experiencing as well as their ability to inspire hope ('they did it, so can I'). Some participants, however, clearly stated that workers should be professional, indicating that being an ex-user is perceived as important, but not the only necessary criteria.

Perceptions of treatment services

Treatment services suffer poor reputations among the participants. Treatment services need to not only be more attractive to adolescents, but they need to promote themselves to negate their current reputation.

The physical setting

There was some disagreement about whether services should be in the city or in the country, suggesting that both have benefits. Wherever they are, participants stated that they should be nice environments, eg have indoor and outdoor space, and not be in run-down old houses. Unfortunately, few services have sufficient space and most are located in run-down old houses.

Lack of access to services

Even the participants spoken to who had already used services noted a lack of services, particularly in rural areas.

Client-mix

Dynamics among residents were seen to be sometimes therapeutic, sometimes bad enough to cause a client to drop out. Services need to establish mechanisms to address this issue, as a bad treatment experience can be more harmful than no treatment. For example, services might need to segregate younger adolescents from older adolescents; or set a narrow age entry criteria so that younger adolescents are not 'led astray' by older adolescents.

Program content

The participants spoken to tended not to advocate specific program strategies such as skills-training, probably reflecting a lack of experience of a range of intervention options. They did, however, favour a) recreational programs as a means of exploring non-substance-related means of using leisure time and b) empathic counselling.

All of the issues raised by the participants had also been raised by service providers. However, the data from the target group consultation were much less rich than the data from service providers, probably reflecting a narrower range of experience and greater concern about a more limited number of issues. In particular, the participants were concerned about having a say in their treatment, having some autonomy, and being understood and respected. These are rights that adults expect and take for granted, but that do not seem to be granted to adolescents in treatment, at least not to the degree that adolescents would like. The balance between setting limits and boundaries and giving freedom and rights continues to be a major issue for adolescent service provision.

9.9 References

1. American Psychiatric Association (1994) *Diagnostic and statistical manual of mental disorders* (Washington, DC, American Psychiatric Association).
2. Filstead, W. (1970) Qualitative methodology (Chicago, Rand McNally College Publishing Company).