



SELECT COMMITTEE ON SUBSTANCE ABUSE  
IN THE COMMUNITY

**SUBMISSION NUMBER 0031**

*DATE: 2 July 2002*

*TABLED: 2 July 2002*

*RECEIVED FROM:*

*Tabled by DASA*

*Structural determinants of youth drug use.*

# structural determinants

# of Youth drug use

A report prepared by the National Drug  
and Alcohol Research Centre, UNSW

\*in collaboration with C.J. Spooner: Planning, Research and Evaluation

Catherine Spooner\*

Wayne Hlall

Michael Lynskey

for the Australian National Council on Drugs, 2001

©Australian National Council on Drugs 2001

This work is copyright. Apart from any use as permitted under the *Copyright Act 1968*, no part may be reproduced by any process without the written permission of the publisher.

This Report Was prepared for the Australian National Council on Drugs by the National Drug and Alcohol Research Centre, University of New South Wales (tel. 02 9398 9333), in collaboration with C.J. Spooner: Planning, Research and Evaluation.

Published by the Australian National Council on Drugs  
PO Box 269, Woden ACT 2606  
Telephone: 02 6260 5791  
Fax: 02 6281 0995  
Email: [ancd@ancd.org.au](mailto:ancd@ancd.org.au)  
Website: [www.ancd.org.au](http://www.ancd.org.au)

National Library of Australia Cataloguing-in-Publication data

Structural determinants of youth drug use.

Bibliography.

ISBN 1 **877018 01 5**.

1. Narcotics - Economic aspects - Australia. 2. Narcotics - Social aspects - Australia.
3. Narcotic addicts - Australia. 4. Youth - Drug abuse - Prevention. 1. Lynskey, Michael Thomas. 11. Hall, Wayne. 111. Spooner, Catherine. 1V. Australian National Council on Drugs.

362.2930994

Editor: Julie Stokes  
Design: Kal Starkis, Starkis Design  
Printed by: New Millennium Print

Acknowledgement:

This work has been supported by funding from the Commonwealth Department of Health and Aged Care.

# Contents

Preface	vii
Acknowledgements	viii
Executive summary	ix
<b>1</b>	<b>Background..... 1</b>
<b>2</b>	<b>Child and adolescent development..... 3</b>
<b>3</b>	<b>Economic environment ..... 6</b>
<b>3.1</b>	<b>Socioeconomic gaps..... 6</b>
3.1.1	Contributing factors..... 7
3.1.2	Mediating factors..... 7
<b>3.2</b>	<b>Unemployment ..... 9</b>
<b>3.3</b>	<b>Socioeconomic status..... 10</b>
<b>3.4</b>	<b>Changes to macro-economic policies 11</b>
<b>4</b>	<b>Social and cultural environment 12</b>
4.1	Social environment 12
4.2	Values and beliefs..... 13
4.3	Media..... 13
4.4	Leisure time..... 13
<b>4.5</b>	<b>Ethnic culture..... 14</b>
<b>4.6</b>	<b>Workplace culture..... 15</b>
<b>5</b>	<b>Physical environment..... 16</b>
5.1	Youth and public space..... 16
5.1.1	Urban fringes and rural settings ..... 16
5.1.2	Regulation of public space..... 17
5.1.3	Indicators of environmental quality..... 18
5.2	Neighbourhood clusters ..... 18
5.3	Transport ..... 19
5.4	Conclusion ..... 19

<b>6</b>	<b>Disadvantaged groups</b> .....	<b>20</b>
<b>6.1</b>	Sole parents .....	20
<b>6.2</b>	Rural populations .....	20
<b>6.3</b>	Aboriginal and Torres <b>Strait Islander peoples</b> .....	20
<b>6.4</b>	Conclusion .....	21
<b>7</b>	Policy implications .....	22
<b>7.1</b>	Investment in core infrastructure .....	23
<b>7.2</b>	Network available resources and ingenuity .....	23
<b>7.3</b>	Focus On core dynamics .....	24
<b>7.4</b>	MonitorT the outcomes .....	24
<b>7.5</b>	Health impact statements .....	24
<b>7.6</b>	Opportunities for changing structural factors and preventing abuse .....	25
<b>7.7</b>	Barriers to changing structural factors and preventing abuse .....	25
<b>8</b>	Conclusions and recommendations .....	26
<b>9</b>	Appendices .....	28
<b>9.1</b>	Aim and objectives for this Project .....	28
<b>9.2</b>	Research methods for this project .....	28
<b>9.2.1</b>	Audience .....	28
<b>9.2.2</b>	Approach .....	28
<b>9.2.3</b>	Literature sources and key informants .....	29
<b>9.2.4</b>	Sampling and methodologies to ensure quality data .....	31
<b>9.2.5</b>	Study limitations .....	31
<b>9.3</b>	Prevention and harm minimisation .....	32
<b>9.4</b>	Terminology .....	32
<b>9.4.1</b>	DSM-IV criteria for psychoactive substance use disorders .....	33
<b>9.5</b>	Risks and harms associated with youth drug use and abuse .....	35
<b>9.5.1</b>	Adverse consequences .....	35
<b>9.5.2</b>	Priorities for intervention .....	36
<b>9.6</b>	Youth drug use patterns .....	37

9.6.1 Drug use among the general adult population.....	37
--	----

9.6.2	Student drug use in Australia	37
9.6.3	Young people in the workplace .....	38
9.6.4	Drug use among Indigenous, immigrant and NESB Australians .....	39
9.6.5	Rural versus urban populations .....	41
9.6.6	<b>Trends</b> in age of initiation .....	42
9.6.7	Typical life course of drug use.....	43
9.6.8	Conclusions.....	43
9.7	Child and adolescent development.....	43
9.7.1	Theoretical perspectives on normal development	43
9.7.2	Adolescence	44
9.8	Reasons for drug use and abuse.....	45
9.8.1	Drug abuse in context.....	45
9.8.2	Causality .....	46
9.8.3	Aetiology of use and abuse behaviours.....	46
9.8.4	Reasons for USC - youth perspective.....	47
9.8.5	Reviews and models of risk and protective factors.....	47
9.8.6	Synthesis .....	53
9.9	Health Promotion.....	54
9.9.1	Definition .....	54
9.9.2	Health promotion planning.....	54
9.9.3	Target GTOUPS.....	55
9.10	Drug prevention strategies .....	56
9.10.1	Focusing on the individual.....	56
9.10.2	Family interventions.....	57
9.10.3	Local community interventions.....	57
9.10.4	Comprehensive community approaches.....	58
9.10.5	Legislation and law enforcement.....	58
9.10.6	Harm reduction approaches.....	60
9.11	A model of influences on drug use behaviour.....	60

10	References	62
10.1	Alphabetical guide to list of references	77

## Figures and tables

Figure 1: Population prevalence of drug use, 1998 NDS survey.	36
Figure 2: Proportion of students, by age, who had used any licit or illicit substance <b>in</b> the last month, Australia, 1996	38
Figure 3: Drug use in the past year among Aboriginal and Torres Strait Islander peoples, overseas-born and other Australian adults	39
Figure 4: Cohort trends in age of first cannabis use, 1998 NDS survey	42
Figure 5: Interrelated conceptual domains of risk factors and protective factors	52
Figure 6: Social stress model	53
figure 7: Influences model	61
Table 1: Indicators of Local Environment Quality (based on evaluations of 1 0- 1 5 year olds at UNESCO-MOST Growing Up in Cities sites)	18
Table 2: World Health Organisation classifications of drug use	32
Table 3: Criteria for Substance Abuse from the <i>Diagnostic and Statistical Manual of Mental Disorders</i> (DSM-IV)	33
Table 4: Criteria for Substance Dependence from the <i>Diagnostic and Statistical Manual of Mental Disorders</i> (DSM-IV)	34
Table 5: A summary of adverse effects on health for heavy users of the most harmful common form of each of four drugs	35
Table 6: Summary of lifetime drug use, secondary school male and female students aged 12-17 years, Australia, 1996 (N=28 988)	37
Table 7: Lifetime use of cannabis by language background	40
Table 8: Hazardous drinking (>5 drinks in a session) in previous two weeks by language background	40
Table 9: Health promotion framework for identifying factors associated with or contributing to a health problem	54
Table 10: Objectives, rationale and problems with typical drug prevention strategies aimed at individuals	56

# Preface

This report was commissioned by the Australian National Council on Drugs and summarises the available literature on the structural determinants of youth drug use. The breadth of information that could potentially be incorporated in this report is enormous, including literature from the fields of health (public health, child and adolescent development, mental health), economics, crime prevention, social policy and town planning. A thorough investigation of all of the available information was not possible, so the report has necessarily been selective in the information presented. Much of the background information, with which it is assumed most readers will be familiar, is Presented in appendices.

If there is one single message we would like the reader to take away from this report, it is that drug use is as much the result of macro-environmental factors as of individual decisions. Furthermore, these factors are also important for understanding a range of adverse psychosocial health outcomes among young people. Policies that contribute to the health of society therefore will have positive impacts on a range of outcomes for adolescents, including drug use, crime, physical and mental health.

# Acknowledgements

We would like to express our gratitude to the following people who contributed to this report, through participation in discussions, comments upon drafts, and the provision of information:

Professor Don Anderson, Australian National University  
Dr Maggie Brady, Australian Institute of Aboriginal and Torres Strait Islander Studies  
Mrs Eva Congreve, Archivist, National Drug and Alcohol Research Centre, University of New South Wales  
Mr Richard Eckersley, National Centre for Epidemiology and Population Health, Australian National University  
Mr Bruce Flahe", Crime Prevention Division, NSW Attorney General's Department  
Professor Sandra Gifford, School of Health Sciences, Deakin University  
Professor Ross Homet, School of Criminology and Criminal Justice, Griffith University  
Associate Professor Wendy Loxley, National Drug Research Institute, Curtin University  
Dr Karen Malone, Asia-Pacific Director, UNESCO-MOST 'Growing Up In Cities Project'; Science and Environmental Education Lecturer, Faculty of Education, Monash University.

We would like to particularly thank Dr Malone for drafting the section on youth and public space.

Associate Professor Alison McCJelland, Social Work Department, La Trobe University  
Dr Joanne Ross, National Drug and Alcohol Research Centre, University of New South Wales  
Associate Professor Ann Sanson. Australian Institute of Family Studies  
Dr Mel Miller, Siggins Miller Consultants  
Associate Professor Alan Reid, Division of Education, Arts and Social Sciences, University of South Australia  
Associate Professor John Toumborou, Centre for Adolescent health, University of Melbourne  
Professor Graham Vimpani, Pediatrics, Newcastle University.

# Executive summary

Despite the allocation of significant resources to drug prevention in Australia, youth drug use remains a significant concern to the community. To date, most drug prevention efforts have been directed towards **encouraging** individuals **not** to use **or** misuse drugs. This report, commissioned by the Australian National Council **on** Drugs, aimed to provide information on macro-environmental influences on youth drug use, and **how** government policies and programs (structures) can positively or negatively influence those macro-environmental factors to prevent drug use and harms. The macro-environmental influences investigated were the economic, social and physical environments.

The review was preceded by a description of recent research into early childhood and developmental transitions. It was noted that early childhood and periods of transition are critically important in the psychosocial development of children. Macro-environmental factors and structures can facilitate or impede this development, directly or indirectly via the family.

Within the economic environment, widening socioeconomic gaps in Australia and elsewhere have been associated with poorer developmental health. Developmental health is a broad concept (of which drug use is one aspect) that refers to the physical and mental health, well-being, coping and competence of a population. Two mediating factors to explain this association were relative deprivation and social capital. That is, widening socioeconomic gaps have been associated with increased feelings of relative deprivation and decreased social capital, which negatively affect community life. Furthermore low socioeconomic status, including unemployment, has been found to cluster within communities, creating environmental risk factors for children growing up within those areas. A range of macro-economic policies for addressing socioeconomic gaps and clusters of unemployment are available, including taxation policies, education policies and labour policies.

Research on the influence of the social environment has identified 'how social environments, such as the availability of social supports and levels of social cohesion, can affect health and well-being. A number of elements of the social environment were considered: values and beliefs, the media, the availability of leisure time, ethnic cultures and workplace cultures. It has been argued that the greater individualism and libertarianism of modern society have some benefits, but have also resulted in a lack of shared norms, values and feelings of belonging, resulting in youth alienation and a sense of powerlessness.

Evidence that the mass media have influenced drug use was found to be scant, but concern about this area is still warranted. The lack of leisure time for many working parents can be a problem when it results in a lack of supervision and boredom for children. Ethnic cultural influences can vary with a range of factors, and can have positive as well as negative impacts on drug use and social development. Drug and alcohol use cultures within work sites were identified as an issue of concern in relation to young people entering the workforce. In sum, multiple social and cultural influences on youth drug use were identified

Physical environmental issues, including urban planning and policies, socioeconomically deprived clusters ('ghettos') and transport options were discussed. For example, policies that encourage moving young people from public spaces without considering their need for safe spaces to socialise can alienate youth. Socioeconomically deprived areas within Australia have been identified, characterised by multiple indicators of disadvantage such as high unemployment. These areas provide few opportunities and poor role models for young people and need specific Programs to shift the cycle of disadvantage. Promotion of public transport rather than roads has been found to promote social functioning within a community. In sum, policies relating to the physical environment can contribute to the type of community within which children are raised, and to their sense of belonging to the community, with ramifications for child developmental outcomes, including drug use.

Some groups within the community are particularly affected by the macro-environmental influences covered in the report, including sole parents, rural populations, and Aboriginal and Torres Strait Island communities. Particular attention needs to be given to these disadvantaged groups, to address current states of disadvantage.

In sum, a range of inter-related economic, social and physical aspects of the macro-environment have been found to influence developmental health within a community. While specific research identifying the specific influences of these environmental factors on drug use was not always found, there is good evidence for understanding drug misuse in the context of other health risk behaviours, psychosocial disorders and developmental health. Given this broader view of drug use, it is likely that research findings from these broader views have relevance for drug use prevention.

Rather than provide a prescriptive set of policies to address the macro-environmental influences on drug use, such as taxation, employment, education and welfare policies, broad principles to underpin government policies and programs are presented. These principles were proposed by members of the Canadian Institute for Advanced Research (CIAR) [1] and are consistent with the recommendations of a number of other such collaborative reviews [2, 3] The CIAR has argued that, given the nature, extent and adverse consequences of societal change we are experiencing, government investment must support societal capacity to adapt to change. To this end, the following broad principles for government policies and Programs have been recommended.

- Invest in core infrastructure. Spending on developmental health should be seen as a social investment, not just a benefit to individuals.
- Improve networks between government departments.
- Focus on the critical times in children's development.
- Monitor interventions and their outcomes to assist needs assessments and fine-tuning interventions.

These principles need to be adopted not just in health policy, but in all government policy. The impact of all economic, education, justice and other policies on developmental health needs to be considered.

In sum, the recommendations of this review of the structural determinants of youth drug use are as follows.

1. With regard to specific drug prevention programs, we need to make better use of research literature that has been available for over a decade:
  - a. Adopt better practice in planning, utilising established methods such as those available in the field of health promotion. For example:
    - i. Address the multiple risk and protective factors for youth drug use.
    - ii. Have specific, measurable, realistic objectives.
    - iii. Work at all levels of influence: the individual, the family, and the local and macro environments.
    - iv. Take a long-term view - one-shot interventions are not effective.
  - b. Learn from the research experience relating to drug prevention. For example, be realistic about the limitations of drug education, media campaigns and law enforcement. Single, one-shot strategies are particularly ineffective. Drug use and abuse is a complex psychosocial issue that cannot be fixed by simple solutions.
2. Take a broader view of drug prevention:
  - a. Acknowledge that drug use is one of a range of Problem behaviours and should not be seen in isolation. Work collaboratively with others concerned with problem behaviours, including crime, suicide and educational problems, to address the shared pathways to these outcomes.
  - b. Understand how drug use is shaped by human developmental processes from birth. This requires consideration of:
    - i. critical and sensitive periods in child development (hence the importance of early interventions);

- ii. developmental transitions (hence the importance of timing interventions to coincide with natural transitions);
  - iii. the importance of family, community and other social networks in shaping human development.
- c. Acknowledge that drug use is not simply an individual behaviour, but is shaped by a range of macro-environmental factors, including the economic, social and physical environment.
- d. Consider the impact of all government policies and programs on the macro-environmental influences on developmental health. This needs to be done at the national, State/Territory and local government levels, and in all areas (including taxation, employment, education, urban planning, transport, justice and so on), not just the health portfolio.
- c. Shift the focus from the negative to the positive. Work towards supporting young people to be happy, socially connected, and engaged in life, rather than focusing on negative outcomes such as drug use.
3. There are a number of groups in Australia who disproportionately suffer the adverse impacts of macro-environmental risk factors. Targeted interventions with high-risk groups are recommended.
4. Improve the link between research and practice: base policy and funding decisions on the research evidence we already have; monitor and evaluate policies and programs; and continually adjust policies and programs to reflect new information as it becomes available.

# 1. Background

Youth drug use has been an issue of public health and broader community concern, particularly in the last two decades.' The Australian Government has responded to this community concern by adopting a policy encompassing three approaches to drug harm minimisation: harm reduction, demand reduction, and supply reduction."[4] A range of strategies to prevent drug use and misuse," including school-based drug education, mass media campaigns, and supply reduction have been implemented in Australia and overseas, with mixed, often disappointing, results."[5] Despite significant expenditure, youth drug use has been increasingly and drug mortality is projected to increase [7] This is occurring within a context of increased rates of other problem behaviours among youth, which are expected to continue to increase as a result of rapid societal changes that are producing less stable environments and greater uncertainty about life.[8]

There have been a number of fundamental problems with drug prevention efforts to date. Firstly, drug misuse has tended to be seen as an isolated health-risk behaviour. There are strong arguments for conceptualising drug misuse as one of a range of health risk behaviours, including school problems and delinquency, which have common risk and protective factors, and which share common health-and-welfare compromising outcomes, such as mental health problems, school failure, unemployment and suicidal behaviour.

Secondly, drug Prevention programs have not often been implemented in a manner that is consistent with health promotion planning methods." Instead of attending to the multiple risk factors for drug misuse, there has been a tendency to target single risk factors for drug misuse (for example, knowledge of harms); and to implement one-off, short-term interventions (for example, school-based drug education). Furthermore, traditional methods of drug prevention have tended to focus upon changing individual knowledge, attitudes and skills so that young people will choose not to misuse drugs. viii There has been insufficient attention paid to the creation of health promoting environments that will support such choices. During the last few years, there has been increased attention in public health to the social, economic and cultural determinants of health (macro-environmental factors) in addition

to individual risk factors .ix [9-11] The need to address environmental risk factors for drug use has been acknowledged internationally, [12] but has received insufficient acknowledgement in Australia.

---

See Appendix 9.5 for an overview of harms associated with youth drug use.

See Appendix 9.3 for an overview of **harm** minimisation policy.

See Appendix 9.4 for a definition and discussions of the terms, including 'use' and 'abuse'. 'Misuse' is used to denote any use that is risky or harmful, and includes early initiation of use.

See Appendix 9.10 for an overview of drug prevention Strategies.

See Appendix 9.6 for an overview of youth drug use patterns and trends,

See Appendix 9.8 for an overview of research on risk and protective factors for problem behaviours.

See Appendix 9.9 for an overview of health promotion and planning methods.

See Appendix 9.10 for an overview of drug prevention strategies.

See Appendix 9.11 for a model of influences on drug use behaviour.

This report into the structural determinants of youth drug use was commissioned by the Australian National Council on Drugs (ANCD). The ANCD is a group of drug experts who have been appointed to provide advice to the Prime Minister and to Commonwealth, State and Territory 'Health, Law Enforcement and Education Ministers on drug issues and how these may be addressed. In commissioning this investigation the ANCD sought 'recommendations that will enable health promotion activities to be conducted in a supportive environment and that could be used to enable primary prevention approaches to achieve maximum impact'. The role of the ANCD to advise government influenced the selection of issues covered and recommendations made in this report. That is, issues that operate at regional, State or national levels and that require responses at those levels were the focus of this study.

Consultations conducted for this project identified a range of definitions of 'structural determinants of drug use'. For example, structural determinants can be defined as factors that usually have an impact upon more than one person, and that result from the way societal institutions are structured for example, the health, taxation, education and welfare systems, and the labour market. Such structures occur at all levels of an individual's environment, for example, the family (family structure), State (school system) and national (taxation system) levels. The conceptualisation of 'structural determinants' used in this report was influenced by two factors.

Firstly, consideration was given to the secondary audience of this report: government ministers at the State/Territory and national levels. What information is useful, relevant and within the sphere of influence of those ministers and policy makers? The second consideration was the availability of research literature. What information is available on 'structural determinants' in the sense used here? The term 'structural determinants' is infrequently and inconsistently used in the research literature. There is no clear definition to draw upon, let alone information under the types of headings suggested by the above definition. Given these considerations, our focus was on the macro-environmental influences on drug use, with consideration for how those macro-environmental influences are, or can be, influenced by government policies and programs ('structures')."

Our approach was to conceptualise drug misuse as one of a range of problem behaviours, with common antecedents and consequences. This is consistent with current conceptualisations of drug use behaviour.[13-16] Accordingly, a broad field of research was utilised, including research from the disciplines of mental health, economics, crime prevention, child and adolescent health, public health, and social policy. Particular attention was paid to non-drug-specific macro-environmental influences on drug use. Drug-specific influences on drug use such as drug legislation, drug availability, and drug law enforcement are not discussed here because current drug policy is already directed towards addressing them "

The macro-environmental factors discussed in this report are the economic environment, the social and cultural environment, and the physical environment. These are not mutually exclusive categories, but intrinsically inter-linked. The discussion of macro-environmental influences is preceded by a brief overview of child and adolescent development. The report concludes with recommendations for national and State government prevention policy.

---

See Appendix 9.1 for the Specific objectives of this paper as provided by the ANCD.

See Appendix 9.11 for a model of influences on drug use behaviour.

See Appendix 9.8 for an overview of drug-specific macro-environmental influences on drug use, including legislation, drug availability and law enforcement.

## 2. Child and adolescent development

An understanding of child and adolescent development is necessary for planning any program relating to child and adolescent health." A concept of particular relevance is that of developmental pathways and transitions, particularly in early childhood, described by Keating and Hertzman. [17] Social Circumstances systematically affect these developmental trajectories and can embed themselves in human biology. This process, which they called 'biological embedding', then affects well-being across the life cycle. Keating and Hertzman described two competing explanatory models of the developmental process:

- The *latency model* emphasises that psycho-social and socioeconomic conditions very early in life strongly affect later life, independently of intervening experience. This model assumes that there are critical and sensitive periods in brain development. Its implication is that early life is critically important for long term development.
- The *pathways model* emphasises that life events have a cumulative effect and that psychosocial and socioeconomic circumstances throughout life reinforce these effects. This model implies that interventions 'aimed at core developmental processes that occur at important transition points in development have enhanced prospect for success [17] Hertzman has described 'now sub-optimal neuro-physiological development, chronic stress, alienation and a marginalised social support network can create physiological changes which can contribute to problems relating to education, crime and drug use in the short term; with adverse impacts upon employment, social support, and chronic disease in mid-life, and degenerative disease in later life [18]

Keating and Hertzman made the following points about biological embedding of social processes:

- Biological embedding does not imply developmental determinism, it means that "negative effects are harder to redirect later in development than they would have been to prevent earlier in development"[17]
- There are *critical periods* in early development during which the experiences of an individual will be encoded, especially in the neural system. Before and after critical periods, the same experiences will have little or no effect on the developing organism. It has been argued that some fundamental features of social interaction might be related to systems in the brain that are subject to critical periods. An analogy was made with the sensory cortex and sight.[19] If the correct stimulation is not received at the right time, the visual system does not work, even though all the necessary parts are physically in place.
- Biology and experience interact. For example, hyperactive rhesus monkeys generally die early, and do not reproduce or become leaders. However, hyperactive monkeys raised by nurturing mothers are more likely than average to become leaders. Evidence suggests that there is a close interplay between biology and experience.[19-21]

---

See Appendix 9.7 for further discussion of child and adolescent development.

Keating and Hertzman's book, *Developmental Health and the Wealth of Nations*, had significant influence on this report. The book was the result of ten years' collaborative research by the Human Development Program of the Canadian Institute for Advanced Research, drawing upon international experts in neuroscience, developmental psychology, education, anthropology, primatology and experimental biology.

- There are also developmentally *sensitive periods* in the development of human cognitive, social, and emotional systems.[1 7] These are less 'all or nothing' than critical periods. For example , there is evidence of sensitive periods in the regulation of emotion, attention and social relationships, which, show longitudinal continuity from the first year of life, to the ability to function in school related cognitive and behaviour skills in the first year of school.[22]

The National Crime Prevention report *Pathways to Prevention*, convened by Professor Ross Homel, used a developmental perspective (as described above) for the development of recommendations for crime prevention.[15] This work is relevant for drug prevention, both because illicit drug use is a 'crime' covered by the report, and because of the overlap in aetiology of crime and drug abuse.-[14] Consistent with Keating and Hertzman, Homel and colleagues described how life is a series of phases linked by a series of transitions. [15] The ability to successfully negotiate a transition is important for coping with the next stage of a person's life. Failure to cope with a transition can create a pattern of cumulative risk factors. These phases and transition points are where interventions can occur most effectively. At these times, individuals tend to be open to advice and learning opportunities that will assist them to cope with these transitions. Hence, the right advice and support, and learning opportunities at the right time, can assist healthy progress through the transition points of life.

Homel and colleagues have noted that social contexts can facilitate or obstruct successful transitions.[15] Transitions are made more easily when social structures provide the information needed to make a transition, A school structure, for example, that has no degree of flexibility makes it more difficult for individuals to cope successfully with transitions. Further, for those who have not successfully coped with a transition, some environments facilitate adjustment and recovery better than others.

While early childhood is a significant period of neurological programming, adolescence is the period during which most drug use commences. Consequently, transitions during adolescent to adult roles are important. The timing of adolescent transitions has changed over the last century, with a longer period of adolescence, longer periods as students with peers, and delayed entry as adults to work settings.[23-25] Eckersly has argued that changes in adolescent transitions have contributed to the increase in psychosocial disorders among young people in the twentieth century. The emergence of a youth culture, which has isolated young people from adults and is increasingly influenced by peers and the media, has increased the tensions between dependence and autonomy that need to be resolved during adolescence. [26]

---

See Appendix 9.8 for Jessor's model of adolescent risk behaviours.

Cultural influences are further discussed in Section 4.

Some empirical support for the changes in sum, child and adolescent development in the timing of transitions comes from entails progress through a series of transitions comes from Schneider's study using data from the Australian Bureau of Statistics.[27] A substantial increase in economic dependency on parents since the 1960s was found, with particularly large increases for young people aged -5-20 during the 1980s and early 1990s. Changes for this group were considered to be mainly the result in increased participation in education, lower employee incomes and changes to changes to government income support. Schnaider hypothesised that this could have an adverse effect on the well-being of young people, their families and the community in general. Possible consequences include lower living standards for young people and their families, family conflict, homelessness, crime and political cynicism.

In sum, child and adolescent development entails progress through a series of transitions and stages in life. Children and adolescents need support at all stages, within in the family and the broader community, to successfully negotiate these transitions, or to recover from less successful transitions.. In particular, a shift in public spending to support the crucial period of early childhood has been recommended.[1, 1 5, 28]

# 3. Economic environment

The economic environment, in particular socioeconomic, social capital, unemployment and other indicators of socio-economic status (SES), are discussed below. While SES is an individual risk factor rather than a macro-environmental risk factor, it is included here because (a) it is substantially influenced by government policy, and (b) it can cluster within communities to form an environmental risk factor.

## 3.1 Socioeconomic gaps

We are in a period of increasing wealth, but increasing disparity between rich and poor.[23, 29, 30] In 1996, the United Nations reported that the 358 richest people in the world controlled assets that were equivalent to the combined annual incomes of poor countries that are home to 45 per cent of the world population.[31] Despite the increased wealth, the percentage of dependent children living below the poverty line in Australia doubled in the last quarter of the twentieth century.[32] Increased wealth has not necessarily been associated with positive outcomes for the community, not even for the wealthy. Eckersley has observed that wealth is a poor predictor of happiness.[33] Happiness is more likely to be connected to a sense of meaning, self-worth and belonging.[34]

There have been multiple studies, particularly in the United States, the United Kingdom and Europe, that have demonstrated that the greater the disparity between rich and poor in a community, State or nation, the worse the outcomes in terms of mortality, morbidity and behaviours including drug use, crime and educational attainment.[35, 36] Keating and Hertzman described this broad set of outcomes as 'developmental health', which they define to include the physical and mental health, well-being, coping and competence of the population.[35] Thus, it is not just the socioeconomically disadvantaged who suffer poorer developmental health than the more advantaged. Large socioeconomic gaps in a population have been found to have detrimental impacts upon the whole of that population. That is, wealthy people in a population with small gaps between wealthy and poor will have better developmental health than equivalently wealthy people in a population with large socioeconomic gaps.

Conversely, a poor person in a low-gap population is better off than a poor person in a high-gap population.

There remain some issues for debate. For example, there are some methodological issues in studies of socioeconomic gaps relating to how adjustments are made for individual income,[37, 38] government expenditure and absolute poverty,[39] and the appropriate unit of analysis (community, State or national).[38, 40] Overall, the findings in support of the impact of socioeconomic inequalities have been fairly consistent across outcomes, countries, levels of analysis, and when other factors such as individual income and poverty are taken into account.[39]

### 3.1 .1 Contributing factors

What are the major forces causing the increase in socioeconomic gaps? Two inter-linked concepts that tend to be considered as major contributors to socioeconomic disparity are neo-liberalism and globalisation. Neo-liberalism (or new liberalism) is a set of principles characterised by small government and big business. Coburn has argued that neo-liberalism produces higher income inequality and lowered social cohesion by undermining the welfare state.[41] The rise of neo-liberalism and the decline of the welfare state, argued Coburn, are themselves tied to globalisation. Globalisation refers to the growth of multinational business corporations, whose primary purpose is to make profit. Stilwell, Professor of Economics at Sydney University, described how globalisation has created a downward pressure on wage rates and tax levels and increased socioeconomic inequalities, thus increasing health problems (as discussed above).[42] He noted that globalisation has generated strong pressure on nations to remove regulations, such as those concerned with environmental protection or the promotion of local industry development.

### 3.1.2 Mediating factors

'How do socioeconomic gaps affect developmental health? Two factors have been discussed in the literature relative deprivation and social capital. Wilkinson has discussed how low social status produces feelings of inferiority and insecurity, thereby affecting emotional attachments in early childhood.[43] Wilkinson has expressed particular concern about children being emotionally scarred by the tensions and conflicts of family life, under stress because the family is living in relative poverty.[39] This notion is consistent with work by Merton in 1968, cited by Kawachi and colleagues, which attributes crime to the *anomie* engendered by the high value placed upon achievement within society, while great disparities in income are evident.[44] That is, a sense of failure, self-blame and resentment results when there are highly visible and large inequalities in material assets. Such *anomie* impacts upon social cohesion - a different concept to social capital (described below).

Social capital is the concept that has received most attention as an explanatory factor in the research literature to date. There have been multiple definitions and conceptualisations of social capital.[45-47] Kawachi has described it as 'those features of social organisation - such as the extent of interpersonal trust between citizens, norms of reciprocity, and density of civic associations - that facilitate cooperation for mutual benefit' (p.1187).[48]

Multiple indicators of social capital have been used, including degree of mistrust, levels of perceived reciprocity, and per capita membership in voluntary organisations,[49] neighbourhood connections, family and friend connections, and tolerance of diversity.[50] It has been claimed that social capital plays an important role in the functioning of community life across a variety of domains, including government performance and democracy, the prevention of juvenile delinquency and crime, the promotion of successful youth development, and reducing socioeconomic disparities in health.[51] Social capital has been found to affect individual health, even after adjusting for income, education and smoking.[48]

Baum and colleagues report on the Adelaide Health Development and Social Capital Project, conducted in a low socioeconomic area in Adelaide, South Australia.[52] Data were collected by a mail survey (N=2542), in-depth interviews (N=40), a survey of 400 community groups and organisations, and 25 case studies of community groups and organisations. The study found that involvement in social and community life improved health and acted as a buffer to declining socioeconomic status. Young people were the least likely to participate in civic activity. The authors hypothesised that this was a cohort effect, with this group of young people being particularly disillusioned with the system and preferring to pursue individual interests, such as sporting and social activities. Baum and colleagues recommended increased investment in structures that facilitate participation in community life, to reduce the fear of strangers and increase trust.[52]

Kawachi has hypothesised that social capital can affect health through different pathways, depending upon whether it is measured at the neighbourhood or State level.[48] For example, at the neighbourhood level, the extent to which neighbours are willing to exert social controls on deviant behaviour such as adolescent smoking and drinking ('collective efficacy') might be determined by the extent of trust ('social capital') within a neighbourhood. At the State level, the data reported by Kawachi and colleagues suggested that a low level of interpersonal trust was associated with a lower level of investment in human security and social safety nets.

There can be some negative aspects of social capital.[48] For example, some forms of social capital can stifle individual choice, others might not be available to all members of the community, and others might have an orientation towards self-interest rather than the community. These, however, might be more measurement than conceptual problems with social capital. Cox and Caldwell have argued that activities that benefit only an individual or a small group of people should not be included in the definition (or measurement) of social capital.[53]

Failing levels of trust in individuals and institutions,[54] and falling participation in ,voluntary work [55] have raised concern about a reduction in public spirit in Australia. Winter has contrasted two types of explanations for such changes: the 'too much state' favoured by a neo-liberal position, and the 'too much market' favoured by those from a social democratic position.[46] According to the former explanation, 'the welfare state has "crowded out" the roles of families and communities, supplanted tasks that they previously undertook, and left people dependent upon welfare provision' (p. 14). According to the latter, there has been 'an over-reliance upon market delivery and competition orients individuals to a consumerist "what's in it for me" mentality, that undermines the cooperation and mutuality of family and community life' (p. 14).

Latham has proposed a set of six strategies for the government for developing a society with shared interests characterised by mutual trust and moral obligation.[56] These include, in brief, policy makers reorienting themselves to be facilitators of social change, the creation of new institutions to bring order to the global economy, a transfer of power from bureaucracies to the community, the devolution of social policy, building up social capability by education, and the democratisation of capitalism. Cox and Caldwell, on the other hand, expressed concerns about the devolution of The responsibility to the local community level.[53] They argued that such a shift can further disempower the disadvantaged.

### 3.2 Unemployment

Fergusson and colleagues studied a birth cohort of young people in New Zealand up to the age of 18.[57] The study participants were assessed on: (a) duration of exposure to unemployment from age 16; (b) DSM-IV diagnostic criteria for major depression, anxiety disorders, conduct disorder, nicotine dependence, other substance abuse/dependence and attempted suicide. This information was integrated with longitudinal data gathered on the social circumstances, family background and adjustment of the cohort up to the age of 18. The study found that increasing exposure to unemployment was associated with increasing risks of psychiatric disorder in adolescence.

Those exposed to Six months or more of unemployment had rates of disorder that were 1.5 to 5.4 times 'higher than those not exposed to unemployment. While most of the elevated risk of disorder among the unemployed was explained by pre-existing family and personal factors, even after controlling for these factors, those exposed to unemployment had significantly higher rates of substance use disorders and anxiety disorder.

In addition to the impact on individuals, unemployment tends to cluster geographically, creating economically deprived neighbourhoods.[58, 59] Kawachi, Kennedy and Wilkinson have discussed how residential concentrations of poverty and unemployment create a double burden for the poor.[44] Not only do they have to deal with their own problems relating to low income, they also have to deal with problems relating to living in a community while most of the neighbours are poor. These Problems include a lack of role models for employment and high rates of delinquency and crime. Vinson reviewed the literature and presented a model depicting how exclusion from the

labour market leads to a series of problems, including low access to better housing and neighbourhoods, non-conformist attitudes, prejudice from mainstream society and so on, which then leads to the development of an alienated subculture.[58]

Similarly, Gregory and Hunter discussed how economically deprived neighbourhoods can develop their own pathologies. As unemployment increases within a neighbourhood and fewer friends have jobs, access to informal Sources of work is decreased, as the most successful method of obtaining employment is through friends and contacts. Furthermore, individuals living in depressed neighbourhoods might develop behaviour patterns that make it difficult for them to be successful in job search.[29] In terms of the impact on young people, Gregory and Hunter noted that growing numbers of sole parents - who tend to be unemployed women - are increasingly concentrated in low-SES neighbourhoods. Consequently, more children are growing up in disadvantaged communities. Furthermore, the joblessness in low-SES areas begins with adolescents. In 1991, the employment rate of adolescents in low-SES areas was 80 per cent that of high-SES areas.[29]

In sum, unemployment has significant impacts upon communities as well as on individuals. Communities with high levels of unemployment have particularly negative effects on children growing up in those communities. Policies and programs that aim to increase employment levels, particularly in areas of high unemployment, are likely to be beneficial. For example, the Centre of Full Employment and Equity at the University of Newcastle has proposed a model for full employment, funded by the government.[60] Kawachi and colleagues also suggest dispersing public housing to avoid concentrations of low income and unemployed people.[44]

### 3.3 Socioeconomic status

Employment is one indicator relating to socioeconomic status (SES). Other indicators include education, occupational class, personal income, spending power and housing tenure. Stuart and Price reviewed studies of the impact of SES and unemployment on substance abuse and found consistent reports that people from low-SES groups, unemployed or underemployed, and the homeless are at much greater risk of substance abuse than the general population.[61] For example, Makela studied the death register in Finland for the period covering 1987-95.[62] Multivariate analyses of the 22 000 alcohol-related deaths identified that each of these SES indices was strongly associated with alcohol-related mortality, even after adjusting for other SES indices. Van Oers and colleagues studied the relationship between education and alcohol consumption in a sample of 3787 individuals on the population register in The Netherlands. Among the males, excessive drinking was most prevalent among those with the least education. Among females, 'symptomatic drinking' was most prevalent among females with the lowest level of education.[63]

Parental alcoholism and drug dependence have been identified as risk factors for early onset smoking among young people.[64] Children being raised by families with low SES, it appears, are themselves at increased risk of early onset of drug use, which itself is a risk factor for increased problem drug use [65-70], and the development of problems in other areas of life related to drug use, including sexual activity, criminal activity and reduced educational attainment.[71, 72] These findings have implications not just for targeting of interventions to families with low SES, but for policies that increase socioeconomic gaps so that there is a greater proportion of the population with relatively low SES.

### 3.4 Changes to macro-economic policies

This section has identified that unemployment and other indicators of low SES, as well as large socioeconomic gaps within populations, have detrimental impacts upon

policies that secure economic and geographic access to education and training developmental health. While drug use was not always a measured outcome, there was sufficient theoretical and empirical grounds to suggest that these variables do affect drug use. Turrell and colleagues have noted that a range of macro-economic policies have been recommended to alleviate socioeconomic health inequalities.[73] These include

- redistribution of wealth through Progressive taxation
  - income maintenance policies for individuals and families in poverty
  - improvement of education, particularly for the disadvantaged
  - education and training policies to alleviate unemployment and prevent poverty in the long term
- Policies that secure economic and geographic access to education and training
- labour policies that reduce the risk of unemployment among those in a weak position in the labour force, such as Aboriginal and Torres Strait Islander peoples
  - reducing income differentials by policies that compress income scales, give priority in wage rises to low-income occupational groups, and secure minimum wages
  - legislation that requires health impact statements for all government economic and social policies prior to their implementation.

Turrell and colleagues noted that implementation of such policies would be difficult to achieve. However, the overwhelming evidence is that socioeconomic gaps and disadvantage contribute to a range of detrimental outcomes, not just drug use, so such action is required.

# 4. Social and cultural environment

## 4.1 Social environment

The social environment includes the groups to which people belong, the neighbourhoods in which they live, the organisation of workplaces, and the policies a community creates to order the lives of its members.[36] Prevention interventions with an environmental perspective, according to authors Yen and Syme, can influence the lives of more people over a longer period of time than interventions aimed at individuals. After reviewing research on the effects of society on health, they drew three conclusions. First, areas have characteristics that persist over time and are more than the sum of the individuals living within them. Second, features of the area can affect social support and social cohesion, which in turn affect health. Third, the social characteristics of an area are the result of a number of factors, including socioeconomic status, public services, behaviour and culture. The social environment, **in** these senses, has been associated with disease and mortality risks, independent of individual risk factors suggesting that the social environment influences disease pathways.

There is significant support for the notion of societal influences on health. Wadsworth has argued that the social factors that indicate community disorganisation and disruption, perceived helplessness and lack of support, low educational attainment and poverty affect health at the individual and at the national level.[74] Furthermore, when these adverse conditions affect the lives of children who then become parents, they affect the future health of individuals in that society.

Many of these societal influences are affected by economic factors. However, even within socioeconomically equivalent neighbourhoods, the social environment can affect drug problems and delinquency. For example, relative to poor high-risk neighbourhoods, poor low-risk neighbourhoods have bigger and more diversified social networks, neighbours less suspicious of each other, and greater residential stability.[75]

Davis's review of resilience (see Appendix 9.8.5.3) identified that communities can foster resilience in children, when they have the following qualities [76]:

- neighbourhoods with healthy institutions, such as schools, churches and youth organisations, which provide Positive role models for children as well as infrastructure for youth programs;
- strong social networks in which adults are connected with each other;
- residents and individuals have a sense of control over key areas of their lives, for example, home ownership.

In sum, consistent with the above discussion of the economic environment, research from a range of fields identifies the importance of the social environment, including the availability of social support and role models, on child health and development.

---

Resilience refers to the ability to be well-adjusted and interpersonally effective in the face of an adverse environment.

## 4.2 Values and beliefs

Halpern has suggested that there have been two inter-related changes in moral values and religious beliefs among younger and older generations in Europe in the latter half of the twentieth century.[77] The first has been a reduction in the shared norms, values and constraints at the informal level, resulting in greater individualism and libertarianism. The second has been the replacement of shared norms by formal norms, values and constraints, particularly in the legal sphere.

While there are many benefits to individualism, it has also resulted in disillusionment and alienation from society. Eckersley has discussed how Australian youth feel alienated, pessimistic and powerless.[78] He described western Culture as failing 'to provide an adequate framework of hope, moral values, and a sense of belonging and meaning in our lives, so weakening social cohesion and personal resilience' (p. 423). Eckersley has noted how the failure of western culture to provide guidance and a world view is more apparent in young, heterogeneous nations such as Australia, which lack a long, shared cultural heritage or a strong sense of identity.[79]

Further, Eckersley has argued that modern Western society has failed to provide the matrix of stories, beliefs and values that can hold a society together, and allow individuals to make sense of their lives and be sustained throughout stress and strains of life. This failure, argued Eckersley, is especially costly for young people because of their early stage of development and socialisation.[26]

## 4.3 Media

Wartella's review of the impact of media on problem behaviours among young people concluded that there is little evidence that the media influence drug use.[80] This conclusion was based upon the paucity of rigorous research, rather than research demonstrating a lack of influence. Wartella concluded that the mass media have a role in providing adolescents with information about appropriate standards of behaviour. However, the media are not a major cause of disordered adolescent behaviour. It appears that media can influence the behaviour of some susceptible individuals if they are sufficiently exposed. Further research in this area is warranted. In the meantime, it would be prudent to attend to the messages delivered by mass media to young people.

## 4.4 Leisure time

Bittman has argued that a lack of leisure time can have negative consequences for children and families.[81] A lack of leisure time for parents means unsupervised and unfulfilling time for children as they grow up, particularly for children whose parents cannot afford alternative childcare. Further, people can be 'shut out of society' if they are unable to participate in customary leisure activities. The most recent Australian Time Use Survey indicated that access to time for leisure participation was determined by hours of employment, family responsibilities and gender.[81] Household income had no significant effect on the availability of leisure time after adjusting for working hours. Bittman considered a range of policies to alleviate social exclusion from leisure participation, including regulation of working hours and parental leave.

## 4.5 Ethnic culture

Australia is a multicultural nation, including, people from a variety of religious, language and national backgrounds. Population estimates from the Australian Bureau of Statistics (ABS) for 1998 identified 23 per cent of the population as overseas-born. The 1996 Census showed that a further 27 per cent of persons born in Australia had at least one overseas-born parent.[82] In 1996, 16 per cent of the population five years and over spoke a language other than English at home. Over 200 languages are spoken in Australia, including 48 Aboriginal and Torres Strait Islander languages.[83]

Children born in Australia can be influenced by the cultural background of their parents, grandparents or other relatives born outside Australia. The degree to which Australians born outside Australia might be influenced by the culture of their birthplace can vary according to a number of factors, such as the number of years they have lived in Australia, education, occupation, income and ethnic identification. For example, Australians who arrived in Australia as infants might view their parents' culture and Australian culture differently from those who recently arrived as adults.[84]

Differential family acculturation and role reversal or loss of parental control over adolescents by parents who are less acculturated than their children have been associated with youth substance abuse in the United States.[85, a61 While there is a substantial amount of research into ethno-specific substance use patterns, risk and protective factors, and interventions in the United States,[87] there is little Australian research on this complex topic.

One example of research relating to language other than English (LOTE) spoken at home and drug use among Australian students is a study by Rissel, McLellan and Bauman.[8] Rissel and colleagues surveyed 2573 school students in an area of Sydney characterised by a high proportion of Arabic- and Vietnamese-speaking students. The survey assessed drug use, the school environment, parental strictness, and frequency of social contact. Lower rates of alcohol and cannabis use were reported by the Arabic and Vietnamese-speaking students compared to the English-speaking students. The study identified stricter parenting and less time unsupervised with friends, among Vietnamese-speaking students, perhaps contributing to their lower rates of drugs use. While suggesting that the parenting strategies of some migrant communities might have a beneficial role for drug prevention, the authors noted that the effects of migrant cultures are complex, and warrant further research.

Other research among ethnic groups in Australia has been conducted, particularly by the Drug and Alcohol Multicultural Education Centre in Sydney.[89-93] Conclusions can be drawn only for specific groups within specific areas in specific historical periods. There is insufficient empirical data on ethnic cultural influences on youth drug use to speculate upon the structural factors that could foster positive cultural influences. One could speculate on a range of structural influences, such as immigration policies and practices, policies relating to multiculturalism, and recognition of overseas qualifications (and subsequent employment). Further research is recommended, especially in ethnic communities with over- and under representation of drug use among youth.

## 4.6 Workplace culture

Being employed has been associated with higher levels of alcohol consumption among young people.[94] Alcohol policies, and the extent to which policies are actually enforced, have been found to predict drinking norms and alcohol availability at workplaces. Drinking norms, in turn, have been found to predict work-related drinking and to account for differences in alcohol consumption between two work sites.[95] While attention has been paid to drug prevention for Young people in school, more attention needs to be paid to young people in the workforce.

# 5. Physical environment

## 5.1 Youth and public space

The physical environment is a significant determinant in young people's quality of life in terms of opportunity for leisure and recreation, social integration and participation (which includes education and employment transitions and retention), freedom of mobility, health and identity construction. According to Malone:

Ideally towns and cities should be the place where children and youth can socialise, observe and learn about how society functions and contribute to the cultural fabric of a community. They should also be sites where they find refuge, discover nature and find tolerant and caring adults who support them.[96]

Recent research on young people in local environments has indicated that the neighbourhood, which once served as a resource for recreation and leisure, no longer supports or provides stimulation for young people.[97] This is particularly pertinent when boredom has been identified as a significant contributor to young people becoming involved in risk-taking behaviour.[98] This trend is particularly evident for young people who are spatially disadvantaged through living in urban fringe or rural locations. Drawing upon the Work of Maher, research has established that spatial or Vocational disadvantages are the outcomes of social, political and economic processes.[99] Areas lack particular facilities because of a myriad of decisions by communities, governments and planners, rather than just the physical characteristics of location.

### 5.1.1 Urban fringes and rural settings

Commonwealth and State youth policies frequently identify the importance of young people having ready access to services regardless of their geographical location, social, cultural or economic circumstances (see, for example, the Australian and New Zealand Youth Ministers' youth policy).[100] Services include health, transport, justice, recreation, housing, employment and education. Yet studies of young people in urban fringe suburbs [101] and rural settings [98] reveal that they feel disadvantaged by their location in regard to service provision.

Winter drew upon data from the Australian Living Standards Study (ALSS) conducted by the Australian Institute of Family Studies (AIFS) when exploring the social and locational aspects of young people's living standards in fringe suburbs.[101] He reported that, along with other services, health services were not frequently accessed or available to young people. 'As with other essential services young people generally express little interest in health services, despite an obvious need since depression and problematic alcohol and drug use were not uncommon' (p.5).[101]

Similarly, Patterson and Pegg studied the relationship between 'leisure boredom' and alcohol and drug dependence among youth.[98] They concluded that the results supported the hypothesis that rural youth (especially young males) experienced high levels of leisure boredom and social disconnection and had a greater likelihood of consuming large quantities of alcohol or taking drugs than their city counterparts. This behaviour often resulted in feelings of alienation, depression and physical isolation. These structural factors, according to Baume and Clinton, were the contributing factors to high numbers of male youth suicide in rural areas.[102] A report released by the Queensland Alcohol and Drug Foundation suggested that alcohol and drug problems in rural areas, although common, continued to remain hidden from political view and did not attract adequate resources.[103]

### 5.1.2 Regulation of public space

Boredom and lack of facilities and services have also been identified in youth literature as contributing factors in young people's desire to congregate in public places. In the context of the global trend towards zero tolerance, current research has indicated that many young people are being positioned as 'intruders' and 'illegitimate users' of public spaces. [104, 105] A variety of regulatory policies and policing activities, such as surveillance, curfews, move-on and anti-congregation laws, have been introduced in cities around Australia with the specific aim of restricting young people's access to public space. Policing of the streets and the current climate of a 'fear of crime' have resulted in many people congregating in less visible areas of the urban environment. This retreat to marginal spaces of the street can increase the likelihood of young people being exposed to, and identifying with, individuals involved in street-based drug markets who also operate in these less visible zones.[96]

According to Malone: 'These policing regimes serve to restrict opportunities for youth to develop appropriate spatial behaviours through modeling and integration and reinforce disconnection and isolation from the community' (p.7).[106] This was supported by a recent study by White on the relationship between young people and their involvement in criminal economies around the drug market. He concluded that 'local community circumstances are a vital factor in any exploration of the relationship between drugs and young people' (p.99).[107] Similarly, Bushway and Reuter recommended legislation for better practice in design of public spaces as a crime-prevention strategy.[108]

### 5.1.3 Indicators of environmental quality

Results from the Growing Up in Cities project in Australia and globally have revealed the important role of the local environment as the site for young people to explore meanings of sociability and identity construction..[109] Indicators of local environmental quality developed by young people involved in the UNESCO-MOST international Growing Up in Cities project are presented in Table 1. These features appear to relate to other areas of discussion in this report, such as social capital and relative deprivation (above). For example, 'safety from social dangers' relates to trust, an indicator of social capital. 'Social exclusion and stigma' relate to the discussion of social cohesion, *anomie* and relative deprivation

#### Positive social qualities

Social integration

Safety from social dangers

Cohesive community identity

Secure land tenure

Tradition of community self-help

#### Positive physical qualities

Green areas

Provision of basic services

Variety of activity settings

Safety from physical dangers

Freedom of movement

Peer gathering places

### 5.2 Neighbourhood clusters

Kawachi and Kennedy have noted that the recent increase in income inequality in many countries (described above) has been accompanied by a marked increase in the residential concentration of poverty and affluence.[110] They observe that this segregation has diminished the opportunities for social cohesion and resulted in a number of negative outcomes, including increased rates of crime and reduced productivity and economic growth.

The issue of clusters of unemployment creating 'ghettos' has been described above (section 3.2). Smith and colleagues have Presented data to demonstrate that living in socioeconomically deprived areas contributes to poor health outcomes [111] Poorer neighbourhoods have been found to have greater drug use. Anthony and colleagues demonstrated that clusters of cannabis users [112] and cocaine users [113] were similar to the clustering of annual family incomes, a social index of wealth and economic prosperity.[112]

#### Negative social qualities

Sense of powerlessness

Insecure tenure

Racial tensions

Fear of harassment and crime

Boredom

Social exclusion and stigma

#### Negative physical qualities

Lack of gathering places

Lack of varied activity settings

Lack of basic services

Heavy traffic

Trash/litter

Geographic isolation

Table 1: Indicators of Local Environment Quality  
(based on evaluations of 10-15 year olds at UNESCO-MOST 'Growing Up in Cities' sites)

Source: Chawla [200]

Gregory and Hunter noted that Australia has traditionally not had 'ghettos', as our federal taxation system in Australia is an income-equalising force across neighbour hoods, whereas in the United States ghettos are created by a system of local taxes which amplifies existing inequalities.[29] Mapping research by Vinson, however, has identified a small number of areas with high levels of disadvantage across multiple indicators of disadvantage in Victoria and New South Wales.[58] The nine indicators of disadvantage were mortality, unemployment, low birth weight, child maltreatment, childhood injuries, education, psychiatric admissions, crime, income and emergency relief.

In New South Wales, for example, the 5 per cent most disadvantaged postcodes (N=30) had 4.25 times the share of child abuse, three times the state of long-term unemployment and court convictions, and twice the share of low-income households. Vinson noted that disadvantaged areas in Newcastle were consistent with those identified in a study of that area conducted 25 years earlier.[114] He concluded that this suggested that localised inequities can be persistent, that State or national level initiatives cannot be assumed to be able to override such local disadvantage, and that such areas require intensive help in terms of education, health, family support, housing, justice and other community services.[58]

### 5.3 Transport

Newman, Director of the Institute for Sustainability and Technology Policy at Murdoch University, described how transport systems can substantially affect the environmental, social and economic qualities of cities. In particular, building roads that increase reliance on cars, rather than public transport options, have contributed to a loss of community.[115] Newman presented case studies of European cities that shifted public funding from roads to public transport, with positive outcomes for the environment and the community. The impacts of transport systems on social functioning are worthy of investigation.

### 5.4 Conclusion

In sum, there are multiple aspects of the physical environment that appear to have an impact on social and individual health and drug use behaviours. Public policy decisions can have health-enhancing effects on aspects of the physical environment. Clusters of disadvantage require particular attention.

## 6. Disadvantaged groups

There are a number of groups on whom the weight of macro-environmental risk factors tends to fall the heaviest. In Australia, these include sole parents, rural youth, and Aboriginal and Torres Strait Islander peoples (discussed below).

### 6.1 Sole parents

The percentage of families with dependent children in Australia headed by a sole parent increased from 12 per cent in 1976 to 20 per cent in 1996.[116] Family structure is not correlated with youth substance use nor delinquency when factors such as family adjustment and SES are accounted for.[13, 117, 118] Further, there can be benefits to separation/divorce, particularly from high conflict marriages.[25] However, sole-parent households can suffer significant emotional distress, sole parents who have to work have restricted opportunity to devote time and energy to their children, and those who do not work are often pushed below the poverty line.[25] The percentage of children in Australia in 1980 living in families with adjusted income less than 50 per cent of the median was 8 per cent for two-parent families compared with 61 per cent for single-mother households.[23] There has been a general rise in economic well-being of sole parents in Australia. However, this has been primarily due to public assistance, which has increased dependence of sole parents upon government assistance and reduced their participation in the workforce.[119] Given the financial, and other difficulties faced by sole parents, and their importance in the healthy development of children, particular support in their parenting role is recommended.

### 6.2 Rural populations

Compared to urban populations in Australia, rural populations are economically disadvantaged [58, 120] and use more tobacco and alcohol.[121, 122] The problems of rural populations are likely to relate to a number of factors, including distance (access to services) and vulnerability to external factors (weather in the case of farming, closure of large industries such as mining). Further, the extent to which rural differentials are attributable to the higher proportion of Aboriginal and Torres Strait Islander peoples in rural areas is not known.[73] In sum, rural areas warrant particular consideration for drug prevention and broader public policy issues.

### 6.3 Aboriginal and Torres Strait Islander peoples

As discussed above, Aboriginal and Torres Strait Islander communities tend to suffer disproportionate problems with alcohol abuse and solvent abuse among young people.[123-125] Hunter, from the Centre for Aboriginal Economic Policy Research, has described how 'indigenous people are about two to three times more likely to be impoverished than the non-indigenous population irrespective of the equivalence scale used' (p.vi).[126] Hunter described the depth of disadvantage of Aboriginal and Torres Strait Islander peoples in terms of a range of welfare indicators, such as poor health, overcrowded housing, arrest rates, unemployment, lack of educational qualifications. He concluded that 'health and justice issues probably require the concerted attention of policy makers if there is to be any hope that indigenous welfare will catch up with that of the rest of the Australian community' (p.18).[126]

Furthermore, children from minority groups can be exposed to risk factors related to racism, group powerlessness, and conflicting demands from different cultures.[127] For example, research cited by Homel and colleagues has demonstrated that teachers praise ethnic children less often, less contingently and less enthusiastically.[15]

Homel and colleagues have noted the tendency of Aboriginal women to use the extended family to care for children, rather than preschool.[15] This can be problematic, if, as Homel and colleagues suggested, parenting skills have been lost as a result of the forced removal of children from their parents. Service providers consulted for their study suggested that the low rates of use of preschool could contribute to Aboriginal children 'falling behind' non-Aboriginal children in terms of the socialising and cognitive development that childcare provides.

The period of adolescence in Aboriginal communities can also be problematic. On the basis of anthropological research, Brady has discussed how adolescent boys in Aboriginal communities have an ambiguous status, with very little power or prestige.[128] When combined with an environment stressed by poverty, racism and frequent bereavement, some remote Aboriginal communities have been beset by petrol sniffing among their young people. Indigenous communities with a history of involvement in the cattle industry were found by Brady to have resisted solvent sniffing problems. This resilience was attributed to the independence, self-esteem and outlet for risk-taking afforded by involvement in the cattle industry. Individuals who had adopted Christianity or who valued other activities such as sport and fishing were also found to be resilient to sniffing solvents. Brady concluded that social and cultural factors are paramount in solving youth health problems such as solvent sniffing in Aboriginal communities.

## 6.4 Conclusion

In sum, targeted interventions are needed to address social disadvantage among disadvantaged populations, not just the drug use problems that are both symptomatic and contributory factors of underlying disadvantage. Further, those interventions need to be specifically tailored to be appropriate to the target group. Resnicow has discussed the rationale for targeted and tailored substance use prevention programs and provides a model for understanding cultural sensitivity as it pertains to substance use prevention.[87]

## 7. Policy implications

Various recommendations have been made throughout this report in light of the research reviewed. In considering the policy implications of this report, the recommendations that appeared most consistent with, and appropriate for, the range of macro-environmental issues discussed above were the recommendations by Keating, summarised below.[1] Keating's recommendations were based upon ten years of multi-disciplinary international research and are consistent with the recommendations of 'Homel and colleagues in relation to crime prevention.[15] Although there is some overlap, Keating's recommendations are focused at a State/national level while the recommendations of Homel and colleagues were more focused on the local community level. Thus, while we support Homel and colleagues' recommendations, it is Keating's that are briefly summarised below.

Keating argued that there is an urgent need to examine our investments in developmental to examine our investments in developmental health of human populations. In particular, he recommended two foci. The first relates to supporting human development by having a societal capacity to adapt to change, using existing material, cultural and social resources. This capacity for societal adaptation is crucial during periods of rapid social and technological change, such as we are currently experiencing on a global scale. The second focus is the ability of communities to incorporate this capacity within everyday social practices that directly affect is defined as one that 'commits to understanding and then acting upon these core dynamics of human development' (pp. 338-339).[1] Some general lessons for a learning society identified by Keating are presented below:

- The key necessities for supporting healthy child development are income, nutrition, child care, stimulation, love/support, advocacy and safety.
- Our societies have under-invested in development in the early years (0-5 years), compared to the school-age years, despite research that identifies that these early years are most important.
- To improve the quality of human development, attention needs to be paid to all levels of social aggregation: family, neighbourhood, school and the national socioeconomic environment.

Keating examined the costs of failing to provide supportive contexts for developmental health, in terms of reduced school performance, increased antisocial behaviour, and reduced work participation. He identified significant cost benefits from investing in child development. These cost benefits were greatest, up to \$7 return for every \$1 invested, when the investments were made in the most deprived sectors of the population.[1] This finding is consistent with other reviews of the cost benefits of early childhood interventions.[2, 28, 129]

Keating outlined a number of key principles for a learning society: invest in core infrastructure, network available resources and ingenuity, focus on core dynamics, and monitor the outcomes.[1] These are human development. A 'learning society' explained below.

## 7.1 Investment in core infrastructure

Keating noted that there has been a trend in western societies to reduce spending on infrastructure, and toward devolution of responsibility to the local community level. Devolution can be a good thing, given the importance of community influences on drug use and variations between communities in such influences. However, **there** has not been a transfer of funds to the local level along with the transfer of responsibility. Spending on developmental health needs to be seen as social investment in societal adaptability and economic prosperity, rather than simply as a benefit to individuals.[1]

## 7.2 Network available resources and ingenuity

Keating noted that the various government departments that plan, resource and implement services or activities are separate entities that are structured vertically.[1] Departments of health, education, juvenile justice, community services and non-government organisations are not well integrated to plan and work together to maximise the efficient use of scarce resources. This structure has multiple repercussions. Keating noted that individuals and families with a problem might face an array of services that are impossible to negotiate, let alone understand. The National Crime Prevention's study of Australian crime prevention emphasised that lack of collaboration between departments can be counterproductive.[15] In particular, they described how the goals of one government department can be affected by the policies of another. For example, a department of school education might implement a policy of suspending or expelling children who are found using drugs. If no arrangements are made to supervise the students, they might use their free time to engage in crime to fund drug use or they could be injured while using drugs alone. In this way, a solution for the education sector can become a problem for the law enforcement and health sectors. A learning society needs to be able to network the resources to maximise their benefits.

A whole-of-government view is needed to identify the cost-effectiveness of programs. The resources given to preventive interventions by one government department might have cost savings for other government departments. For example, Karoly has documented how the early childhood programs, funded by health and/or community services, can result in substantial long-term savings in welfare and criminal justice costs, as well as social benefits such as reduced crime and greater economic participation.[28]

Finally, vertically structured government departments, and units within departments, contribute to the current system of separate funding sources, policies and programs for related issues. For example, separate policies and strategies exist for mental health, youth suicide, crime prevention and drug prevention. Given the interrelated nature of these issues (see Jessor's model, section 9.8.5.4), it would make sense to incorporate these issues within a broader developmental health policy. While there is a need for some focus on specific issues, the current system of multiple programs encourages duplication and resources being spread too thinly. Roussos and Fawcett discuss the substantial problems and logistics of collaborative partnerships and give guidelines for improving their effectiveness.[130]

### 7.3 Focus on core dynamics

Keating noted that even well-networked interventions can be poorly targeted. He suggested that interventions need to be based upon, then fine-tuned in the light of, research. Some key guidelines for such research, based upon the developmental framework proposed in *Developmental Health and the Wealth of Nations: Social, biological, and educational dynamics*, [35] are presented below.

- Investment must be made at critical times in development, particularly the first few years of life.
- As many negative consequences as possible need to be anticipated and monitored. Problems need to be acted upon immediately - changing a key link in a system can change negative outcomes to positive outcomes.
- External changes will inevitably happen as we are living in an ever-changing world. These changes need to be monitored and the system adjusted as necessary. Given such changes, it is not appropriate to focus only on the achievement of specified outcomes. Our contexts and our problems will change over time so attention needs to be paid to the overall health of the population.
- Investment in research and development into the best ways to achieve gains is necessary to understand the system. Such understanding is necessary to achieve positive changes to the system.

### 7.4 Monitor the outcomes

Monitoring developmental health on a routine basis is necessary for understanding the process and impact of interventions. Routine monitoring can assist needs assessment as well as learning about ineffective interventions within particular subgroups of the community.[1]

### 7.5 Health impact statements

Keating and others have recommended that all government authorities, including local, State and national government departments, produce a health impact statement for all new policy and program initiatives.[1, 2] This is similar to the concept of environmental impact statements. However, it means that all initiatives, including taxation, housing, education and so on, need to consider the impact on humans, in light of current knowledge of the impacts of socioeconomic and other factors on developmental health. This recommendation was also made following the Acheson inquiry into inequalities in health in the United Kingdom.[3, 131, 132]

For example, an increasing proportion of Australian secondary school students are not attending their local public high school, but attending out-of-area selective, private or religious schools. There is currently very little Australian data on this phenomenon, known as the 'residualisation' of public education.[133] Most of the research has been conducted overseas.[134-136] The contribution of current policies to this trend, and its impact, are not known. Does this trend increase the gap between the advantaged and disadvantaged students? Does travelling out of area reduce social cohesion and support structures? Similarly, what is the effect of university fees on the developmental health of Australia?[137].

### 7.6 Opportunities for **changing** structural factors and **preventing** ab/use

There are a number of organisations and groups in Australia whose brief is to consider the macro-economic and structural determinants of drug use. The Health Inequalities Research Collaboration (HIRC) has been established in Australia to 'undertake research and development that will contribute to the reduction of health inequalities in Australia' (p.8).[138] The group is particularly concerned with the effect of socioeconomic disparities on health. A report produced with the HIRC compiled national Australian data on disparities in health outcomes between groups of different socioeconomic status.[73] The HIRC could be a useful partner in future investigations and initiatives

relating to structural (socioeconomic) interventions to reduce drug ab/use. Other organisations and individuals within Australia, not specific to the drugs field, that can contribute to the recommendations of this report include those that Australia (like other developed societies) involved in National Crime Prevention,[15] social policy, suicide prevention, Aboriginal and Torres Strait Islander issues, economics, town planning and mental health. Some of these individuals and organisations are listed in the acknowledgements to this report, and that the list of Internet sites visited for this report (section 9.2.3).

## 7.7 Barriers to changing structural factors and preventing ab/use

There are a number of barriers to implementing the recommendations for policy discussed in this chapter. Two particular barriers relate to community expectations and the difficulty in changing large structures, as discussed below.

Regular use of drugs Other than alcohol is not considered acceptable by the majority of the Australian population.[125] While the community has expressed concern about drug problems, it is not well informed about drug prevention. For example, despite the limited success of drug education,[5] education is the preferred option for dealing with drug problems among the general population in Australia.[139] There is pressure from the community for the government to fix 'the drug problem', and to do it quickly. This can contribute to policies and programs having unrealistic goals and objectives. Given that Australia (like other developed societies) is a drug-using society, and that the aetiology of drug use behaviours is complex, such goals are unrealistic.

A second barrier to implementation of the and recommendations of this report is the extent of change that is required. This report is recommending fundamental changes to the priorities and operations of government and requires commitment to longer-term planning, intersectoral collaboration, and new policies, such as the requirement of a health impact statement for all policies and programs. Even if the arguments for such changes are accepted, moving towards the implementation of such changes will require substantial commitment and resources over a sustained period of time.

## 8. Conclusions and recommendations

Drug misuse should not be seen as an isolated behaviour which can be fixed solely by drug-specific education and other activities directed at individuals. It is one of a number of risk behaviours that are affected by macro-environmental factors, including socioeconomic gaps, unemployment, social capital, the physical environment and social values and beliefs. The family is a significant mediator of these influences. The structural changes that are needed to address these problems will have positive impacts not just on drug use, but on other risk behaviours and psychosocial disorders among youth. Given the cost and effort and often minimal and short-lived impacts of even large-scale, multi-modal drug prevention projects, a more cost-effective approach to preventing drug ab/use and other problems among young people is required.

In summary, the recommendations from this review of the structural determinants of youth drug use are as follows:

1. With regard to specific drug prevention programs, we need to make better use of research literature that has been available for over a decade:
  - a. Adopt better practice in planning, utilising established methods such as those available in the field of health promotion. For example:
    - i. address the multiple risk and protective factors for youth drug use
    - ii. have specific, measurable, realistic objectives.
    - iii. work at all levels of influence: the individual, the family and the local and macro environments
    - iv. Take a long-term view - one-shot interventions are not effective.
  - b. Learn from the research experience relating to drug prevention. For example, be realistic about the limitations of drug education, media campaigns and law enforcement. Single, one-shot strategies are particularly ineffective. Drug ab/use is a complex psychosocial issue that cannot be fixed by simple solutions.
2. Take a broader view of drug prevention:
  - a. Acknowledge that drug use is one of a range of problem behaviours and should not be seen in isolation. Work collaboratively with others concerned with Problem behaviours, including crime, suicide and educational problems, to address the shared pathways to these outcomes.
  - b. Understand how drug use is shaped by human developmental processes from birth. This requires consideration of:
    - i. critical and sensitive periods in child development (hence the importance of early interventions)
    - ii. developmental transitions (hence the importance of timing interventions to coincide with natural transitions)
    - iii. the importance of family, community and other social networks in shaping human development.
  - c. Acknowledge that drug use is not simply an individual behaviour, but is shaped by a range of macro-environmental factors, including the economic, social and physical environment.
  - d. Consider the impact of all government policies and programs on the macro-environmental influences on developmental health. This needs to be done at the national, State/Territory and local government levels, and in all areas (including taxation, employment, education, urban planning, transport, justice and so on), not just the health portfolio.

- e. Shift the focus from the negative to the positive. Work towards supporting young people to be happy, socially connected, and engaged in life, rather than focusing on the negative outcomes such as drug use.
3. There are a number of groups in Australia who disproportionately suffer the adverse impacts of macro-environmental risk factors. Targeted interventions with high-risk groups are recommended.
4. Improve the link between research and practice: base policy and funding decisions on the research evidence we already have; monitor and evaluate policies and programs; and continually adjust policies and programs to reflect new information as it becomes available.

# 9. Appendices

## 9.1 Aim and objectives for this project

The ANCD's aim for this report was to identify and document the broader environmental factors that can act as an adjunct to

other primary prevention initiatives, specific to youth. The objectives were to:

- \* Review and document international and national experience in identifying and responding to structural influences on initiation and subsequent adverse consequences of unsanctioned drug use. Comment on their relative contribution to these events.
- \* Develop recommendations that will enable health promotion activities to be conducted in a supportive environment and that could be used to enable primary prevention approaches to achieve maximum impact.
- \* Provide advice on the relative contribution and potential interactions of structural determinants associated with initiation and subsequent adverse consequences of unsanctioned drug use. Comment on their susceptibility to external influence.

## 9.2 Research methods for this project

### 9.2.1 Audience

The audience for this report is, firstly, the ANCD, to assist in its role in advising government policy. The secondary audience for this report includes interested others who are not necessarily academic or 'expert' in this area, but who are interested in a detailed and academic review and analysis of the topic of this report. In particular, the secondary audience comprises those to whom the ANCD provides advice: national, State and Territory government ministers.

### 9.2.2 Approach

Two main principles guided the approach to this review. First, information was sought from outside the specific field of drug ab/use prevention. Research relating to, for example, crime prevention,[15] the relationship between health and wealth,[35] health risks and adolescent transitions,[140] social change [34] and psychosocial disorders in young people [8] were reviewed and incorporated. A broad frame of references was necessary because drug use is not an isolated behaviour. It enabled the review to incorporate a much larger field of knowledge than is available in the drug-specific literature.

The second principle was the use of multiple sources of information: published literature as well as 'expert knowledge' Expert knowledge was used not to replace published literature, but to assist in identifying key issues and publications, and to comment upon drafts of the report.

### 9.2.3 Literature sources and key informants

The following methods were used to identify relevant literature:

1. Relevant literature, particularly literature reviews, known to the authors were used to Provide an initial framework and to identify issues for the review. An early draft of the framework was discussed with the ANCD prior to proceeding, to ensure the literature review would meet the needs of the client.
2. Electronic databases were searched, using Internet-based technology such as OVID and Web of Science, which include databases such as Medline, Psychlit, Current Contents, Embase and the Cochrane reviews. Other databases searched include Eric and CINCH. Searches were developed using key words such as adolescen\*, drug use, and prevention, and authors known to be leaders in the field such as Michael Rutter, Richard Catalano, David Hawkins and Ichiro Kawachi.

3. The archives of the National Drug and Alcohol Research Centre (NDARC) were searched for relevant references. The NDARC archives include material such as unpublished reports and conference papers that are not available in other libraries and not included in electronic databases.
4. Secondary searches were conducted using reference lists from primary references. Such secondary searching was done (a) using the search facilities of OVID and Web of Science, and (b) as a result of reading primary references.
5. Relevant sites on the World Wide Web were searched. A list of sites visited is presented below.
6. Key informants were asked to provide references and other information. Key informants were identified by:
  - existing knowledge of the authors in this area
  - snowballing - asking experts and key people working in the area of others who else should be consulted.

A list of key informants is provided in the Acknowledgements section of this report.

7. Two relevant conferences were attended, providing new information and contacts:
  - *Social Origins of Health and Wellbeing: From the Planetary to the Molecular*, organised by the Health Inequalities Research Collaboration, Canberra, 2000.
  - *The Costs of Unemployment*, University of New South Wales, Sydney, 2000.

An indicative list of Internet sites searched for this review are listed below.

#### Australian drug-related sites

- Centre for Youth Drug Studies  
<http://www.adf.org.au/cyds/>
- National Drug Strategy  
<http://www.health.gov.au/pubhlth/strateg/drugs/nds/index.htm>
- Turning Point  
<http://www.turningpoint.org.au/main.htm>

#### National Drug Research Institute

<http://www.curtin.edu.au/curtin/centre/ncrpd/>

#### Drug and Alcohol Multicultural Education Centre

<http://www.damec.org.au>

#### Other drug-related sites

Institutes and centres that are part of the National Institutes of Health Human Services: (NIH), US Department of Health and Human Services:

#### The National Institute on Drug Abuse (NIDA)

<http://www.nida.nih.gov/NIDAHome2.html>

#### National Institute on Alcohol Abuse and Alcoholism (NIAAA)

<http://www.niaa.nih.gov/>

Centre for Substance Abuse Prevention, Substance Abuse and Mental Health Services Administration, US  
Department of Health and Human Services  
<http://www.samhsa.gov/csap/index.htm>  
and National Clearinghouse for and National Clearinghouse for Alcohol and Drug Information (NCADI), the  
information service of the Center for Substance Abuse Prevention of the Substance Abuse and Mental Health  
Services Administration  
<http://www.health.org/>

RAND (Research and Development), a non-government research organisation based in the United States  
<http://www.rand-org/>

## Crime prevention sites

The Justice Information Centre (US)  
<http://www.ncjrs.org/>

National Crime Prevention (Australia)  
<http://ncp.gov.au/ncp/>

NSW Crime Prevention Division  
<http://www.lawlink.nsw.gov.au/cpd.nsf/pages/index>

Australian Clearinghouse for Youth Services  
<http://www.acys.utas.edu.au/ncys/default.html>

Centre for Adolescent Health  
<http://www.rch.unimelb.edu.au/adolescent/>

Australian Early Intervention Network  
<http://auseinet.flinders.edu.au/>

Australian Institute of Family Studies  
<http://www.aifs.org.au/>

National Institute of Child Health and Human Development (NICHD), US Department of Health and Human  
Services  
<http://www.nichd.nih.gov/>

ResilienceNet Virtual Library  
<http://resilnet.uiuc.edu/library.html>

The Founders' Network  
<http://www.founders.net/fn/home.nsf/mainviewframeset>

## Sites relating to socioeconomic issues

Health Inequalities Research Collaboration  
<http://nceph.anu.edu.au/>

Centre for Economic Policy Australian National University  
<http://cepr.anu.edu.au>

Centre for Full Employment and Equity  
<http://el.newcastle.edu.au/coffee/index.cfm>

Social Policy Research Centre, University of New South Wales  
<http://www.sprc.unsw.edu.au>

Health sites

Australian Institute of Health and Welfare  
<http://www.aihw.gov.au/>

National Centre for Epidemiology and Population Health  
<http://nceph.anu.edu.au/>

Other

Institute for Sustainability and Technology Policy, Murdoch University  
<http://www.wistp.murdoch.edu.au/>

Australian Bureau of Statistics  
[www.abs.gov.au](http://www.abs.gov.au)

#### 9.2.4 Sampling and methodologies to ensure quality data

Priority was given to:

- recent literature - particularly literature published within the previous three years. However, older research that was still relevant and of high quality was also included;
- research that was methodologically sound, e.g. longitudinal, multivariate studies of risk factors rather than correlational studies;
- expert opinion that was provided by people recognised by peers as having expertise and/or people with numerous related publications in peer-reviewed journals;
- relevant literature, for example, relating to youth rather than adults, relating to the Australian context rather than overseas. It was noted, however, that a majority of the research was conducted outside Australia, particularly in the United States. The target group, 'youth', was defined as 0-25 years. This broad age range was chosen because much of one's personality and adult behaviour is shaped in the very early years of life.

#### 9.2.5 Study limitations

The study was limited by the following factors:

Much of the research was overseas, particularly the United States. Applicability to Australia, particularly to subgroups within Australia such as Aboriginal and Torres Strait Islander youth, is not known.

Much of the research was not specific to drug prevention. However, given the link between drug abuse and other health risk behaviours and psychosocial problems, research that was conceptually relevant to drug prevention was included.

There were limited resources for the review: the equivalent of 45 working days were allocated (although closer to 60 days were spent on the project). Given the broad scope of the review, most issues could not be dealt with in detail. This paper has only been able to identify a range of issues of pertinence to drug prevention. It has not been possible to explore those issues and the likely solutions to the extent that is warranted.

The stated objectives stipulated by the ANCD included a review of international experience in responding to structural determinants and commentary on the relative contribution of structural determinants. This was not done because specific 'interventions' in the usual sense were not recommended. Rather, policy shifts, which have not been well evaluated, if at all, were recommended.

### 9.3 Prevention and harm minimisation

Within the context of the National Drug Strategic Framework, prevention refers to preventing harmful drug use and preventing drug-related harm, and includes preventing the uptake of illicit drugs.[141] Harm minimisation, as defined by the Commonwealth Government, refers to:

policies and programs designed to reduce drug-related harm. Harm minimisation aims to improve health, social and economic outcomes for both the community and the individual and encompasses a wide range of approaches, including

- supply-reduction strategies designed to disrupt the production and supply of illicit drugs;
- demand-reduction strategies designed to prevent the uptake of harmful drug use, including abstinence-oriented strategies to reduce drug use;
- a range of targeted harm-reduction strategies designed to reduce drug related harm for individuals and communities. (pp. 15-16)[4]

### 9.4 Terminology

Definitions of various terms relating to drug use are provided to promote clarity and consistency and to emphasise that value judgements are not used to describe drug use.

*Drug use*: any drug use, from experimental to dependent. as defined by the WHO (Table 2)

*Drug misuse*: drug use that is problematic or risky. This could be a one-off occasion of use (e.g. drink-driving) or use that is consistent with a classification of dysfunctional, harmful, or dependent use as defined by the WHO (Table 2)

*Drug abuse*: drug use that is consistent with a diagnosis of substance abuse, as defined in the DSM-IV (Table 3)

*Drug dependence*: drug use that is consistent with a diagnosis of substance dependence. as defined in the DSM-IV (Table 4)

*Drug ab/use*: drug use, drug misuse, drug abuse or drug dependence.

#### **Table 2: World Health Organisation classifications of drug use**

*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

*Dependent use* that could involve tolerance, withdrawal if use is ceased, and continued use despite severe consequences.

#### 9.4.1 DSM-IV criteria for psychoactive substance use disorders

Table 3: 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.

Source: American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders*. (4th ed.). Washington, DC: the Association.

Table 4: Criteria for Substance Dependence  
from the *Diagnostic and Statistical Manual of Mental Disorders (DSM-W)*

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)

Source: American psychiatric Association (1 994). *Diagnostic and Statistical Manual of Mental Disorders*. (4th ed.). Washington, DC: the Association.

## 9.5 Risks and Alarms associated with youth drug use and abuse

### 9.5.1 Adverse consequences

In 1998-99, the Australian Institute of Health and Welfare and the Victorian Department of Human Services calculated the burden of 126 disease and injury categories and ten major risk factors in terms of YLL (years of life lost due to Mortality), YLD (years of life lost due to disability), and the total disability adjusted life years (DALYs).[7, 142] The risk factor associated with the greatest burden was tobacco. Tobacco smoking was estimated to have caused 12 per cent of the total burden of disease and injuries in males and 7 per cent in females in Victoria. Alcohol and illicit drugs were the fourth and eighth most burdensome risk factors respectively among the total Australian population. However, there were some age and gender differences in these burdens. Alcohol was the second greatest burden for males, and the burden due to illicit drug-related disability was particularly large in the 15-34 year age group. The Victorian Burden of Diseases Study projected that, in 2016, mortality due to lung cancer among women and heroin overdose among men will increase.

Table 5 contains a summary of the various adverse health effects of the most commonly used drugs. The acute consequences of use are most important in terms of years of young lives lost. Between 1964 and 1997 there was a 55-fold increase in the rate of overdose per million of population aged 15-44 years; males comprised 80 per cent of these deaths.[143]. Drug abuse can have other significant adverse consequences such as interfering with educational and vocational attainment, involvement in crime, normal maturation, and family problems.[16] These psychosocial problems are arguably as important as the health consequences listed in Table 5.

<b>Adverse effect</b>	<b>Cannabis</b>	<b>Alcohol</b>	<b>Tobacco</b>	<b>Heroin</b>
<b>Acute effects:</b>				
Traffic & other accidents	*	**		*
Violence & suicide		**		
Overdose & death		*		**
HIV & liver infections		*		**
<b>Intermediate:</b>				
Mental illness	*	**		
Dependence	**	**	**	**
Respiratory diseases	*		**	
Lasting effects on foetus	*	**	*	*
<b>Chronic effects:</b>				
Liver cirrhosis		**		
Heart disease		*	**	
Cancers	*	*	**	

Note: 1 \*\* = important effect \* = less common or well-established effect

Note: 2 Adapted from Hall, Room & Bondy [201].

Table 5: A summary of adverse effects on health for heavy users of the most harmful common form of each of four drugs

Some drugs such as alcohol can be used in a 'safe' manner by adults. However, there are a number of factors that can make drug use by youth more dangerous than drug use by adults. Firstly, youth is a time of physical and psychological development and these processes can be affected by drug abuse.[1 44-146] Secondly, young adolescents are still developing their decision-making skills during a time of experimentation, making them vulnerable to making risky decisions about drug use. Further, initiation of drug use at a younger age is associated with a variety of adverse consequences. These include an increased likelihood of problem drug use [65-70] and the development of problems in other areas of life related to drug use, including sexual activity, criminal activity and reduced educational attainment.[71, 72] Thus, while drug use is, in some cases, 'normative', delay of use among youth and avoidance of regular use are important goals.

### 9.5.2 Priorities for intervention

Paglia and Room recommended that youth prevention work should focus on the more immediate adverse consequences that youth experience (such as injury, overdose or HIV infection), rather than the long-term consequences (such as cancer and heart disease). The reasons for this recommendation are as follows:

- It is easier to impact upon a proximal harm than a distal harm because the effects of any intervention decay over time.
- It is easier to measure the impact of an intervention over a short period of time as, over time, the outcomes are increasingly affected by other factors ('noise').

Young people are more concerned about the 'here-and-now' than about problems they might face when they are old.[5]

Figure 1: Population prevalence of drug use, 1998 NDS survey

## 9.6 Youth drug use patterns

### 9.6.1 Drug use among the general adult population

The Prevalence rates of lifetime and current (previous 12 months) drug use among the adult population of Australia are presented in Figure 1. This information is provided for two reasons. Firstly, it provides a basis for comparing statistics on youth drug use. Secondly, it provides information on drug use within the society in which young Australians are growing up. The licit drugs, alcohol and tobacco, are the most widely used psychoactive substances in Australia, With over 80 per cent of adult Australians having drunk alcohol in the previous 12 months. Among the illicit drugs, cannabis is the most widely used, with nearly 40 per cent of adult Australians having ever tried it and nearly one in five adults having used cannabis in the previous year. The rates of use of other illicit drugs in lifetime and the past year are much lower. These statistics indicate that drugs, particularly alcohol, tobacco and cannabis, are commonly used by adult Australians.

### 9.6.2 Student drug use in Australia

The national secondary school students drug use survey was last conducted in 1996 by the Centre for Behavioural Research in Cancer. The sample was aged 12-17 and the drugs surveyed included alcohol, tobacco and (for the first time in 1996) illicit drugs. The results indicated that the prevalence of use was generally higher among males than females (Table 6) and tended to increase with age (Figure 2). Both licit and illicit drug use was on par with the level of use in the general population. Use of some drugs among 16-17 year-old students exceeded that of the general population.

Internationally, youth drug use appears to be increasing. Bauman and Phongsaven reviewed international studies of secondary student drug use since 1990. They found that there had been consistent increases in the prevalence of tobacco use, hazardous alcohol use, and illicit drug use in most developed countries.[6]

<b>Drug</b>	<b>Males</b>	<b>Females</b>
Analgesics	97	98
Cannabis	40	33
Inhalants	25	26
Tranquillisers	19	20
Hallucinogens	10	08
Amphetamines	07	05
Opiates	05	03
Cocaine	05	03
Ecstasy 1 designer drugs	04	03
Steroids	03	01

Table 6: Summary of lifetime drug use, secondary school male and female students aged 12-17 years, Australia, 1996 (N=28 988)

Source: Lechter & White [202]

Figure 2: Proportion of students by age, who had used any licit or illicit substance in the last month, Australia, 1996

### 9.6.3. Young people in the workplace

While most children and younger adolescents are in school, many adolescents and young people are employed . For example, 52 per cent of young people aged 18-24 in 1995 were described by the Australian Bureau of Statistics as 'employed'. That is, they worked during the preceding week in a job, business or farm for one hour of more or had a job but were absent during that week.[147] United States studies of young people at work have found that working was associated with increased drug use.[94, 148]

## 9.6.4 Drug use among indigenous, immigrant and NESB Australians

### 9.6.4.1 *Indigenous and immigrant Australian adults*

There is little data on drug use among Australians from the numerous ethnic/cultural backgrounds that constitute our population. There is even less information about youth from these groups. Data comparing drug use among Indigenous, immigrant and other (non-Indigenous, non-immigrant) adults are presented to provide a background to the presentation of available data on ethnic groups of young people.

From Figure 3, it can be seen that relative to non-Aboriginal and Torres Strait Islander, non-immigrant Australians:

- Overseas-born Australians were slightly less likely to have used alcohol, tobacco cannabis and other illicit substances in the previous year.
- Aborigines and Torres Strait Islanders were much more likely to have used tobacco, slightly less likely to have used alcohol, and about as likely to have used cannabis and other illicit drugs.

Results from recent studies of drug use among young people from Aboriginal and Torres Strait Islander and non-English speaking backgrounds are provided below.

Figure 3: Drug use in the past year among Aboriginal and Torres Strait Islander Peoples, overseas-born and other Australian adults

#### 9.6.4.2 Students from non-English speaking backgrounds

A survey of school students by Rissel and colleagues identified lower marijuana and alcohol use among students from Vietnamese – and Arabic-speaking backgrounds relative to students from an English –speaking background [149]

Rissel and colleagues conducted a quantitative survey of smoking behaviour among 2573 school students attending Years 10 and 11 from 12 high schools with high Vietnamese and Arabic populations.[88] Male and female students from the Vietnamese and Arabic-speaking backgrounds reported lower rates of cannabis and alcohol use than students from English-speaking and European backgrounds. See, for example, Table 7 and Table 8.

<b>Background</b>	<b>N</b>	<b>Male</b>	<b>Female</b>
		%	%
English-speaking	330	48	44
European or other	708	26	29
Arabic	476	28	9
Vietnamese	828	24	7

Table 7: Lifetime use of cannabis by language background

<b>Background</b>	<b>N</b>	<b>Male</b>	<b>Female</b>
		%	%
English-speaking	330	64	55
European or other	708	55	47
Arabic	476	57	33
Vietnamese	828	45	23

Table 8: Hazardous drinking (.5 drinks in a session) in previous two weeks by language background

Chen and colleagues analysed data from surveys of drug use in New South Wales secondary schools.[150] They found consistently lower rates of smoking and alcohol and illicit drug use among the adolescents who spoke a language other than English (LOTE) at home, relative to those who spoke English at home in all survey years. The exception to this trend was in the prevalence of solvent sniffing, which was higher among younger adolescents speaking a LOTE. Students from Southeast Asia reported consistently lower Southeast Asia reported consistently lower rates of use of all drugs relative to all other language groups.

Similarly, a study of smoking rates and uptake among school students in Sydney by Tang and colleagues found that adolescents who spoke a LOTE were significantly less likely to be smokers than those who spoke English.[151] They noted that this finding occurred despite higher smoking rates among men from a non-English-speaking background, and research identifying a strong association between fathers' smoking status and smoking onset of their children. The authors proposed that these results suggested a delay in uptake among LOTE youth. They could on the the other hand, signify a generational change such that LOTE youth will not take up smoking as did their fathers.

#### 9.6.4.3 *Aboriginal and Torres Strait Islander school students*

Dunne and colleagues surveyed **507** primary school students from schools in Queensland.[152] These schools were chosen because they had a high proportion of Aboriginal and Torres Strait Islander students. Almost half the sample reported an Aboriginal or Torres Strait Island background. No differences were found between Aboriginal and Torres Strait Islander and non-Aboriginal or Torres Strait Islander students in lifetime use of tobacco or cannabis and regular tobacco use. In contrast to Forero and colleagues study, Aboriginal and Torres Strait Islander students were less likely to have experimented with alcohol than non-Aboriginal and Torres Strait Islander students. Given the selective nature of the schools included in Dunne and colleagues study, firm conclusions cannot be drawn about the wider population of primary school children.

Forero and colleagues studied the substance use of a large and representative sample of Aboriginal and Torres Strait Islander secondary school students.[124] Their study identified higher rates of substance use among Aboriginal and Torres Strait Islander students relative to non-Aboriginal and Torres Strait Islander students. The authors identified a range of socio-demographic factors that were significantly associated with status as an Aboriginal and Torres Strait Islander and substance use: age, rural/urban status, living with both parents, school performance, parental supervision and school absenteeism.

#### 9.6.4.4 *Conclusion*

From the data reported above, it appears that the adults and young people born overseas and from at least some non-English-speaking backgrounds are less likely to use drugs, while Indigenous Australian students tend to be more likely to use drugs than their same-age peers. However, generalisations cannot be made to all cultural groups in all areas. For example, pockets of problems have been identified, such as high rates of heroin use among Indo-Chinese youth in southwestern Sydney.[153]

#### 9.6.5 Rural versus urban populations

Data from the National Survey of Mental Health and Well-being identified that adults from rural areas were slightly *more* likely to smoke tobacco, drink alcohol and to drink alcohol daily than urban residents.[121] Conversely, rural residents were slightly less likely to use cannabis and other illicit drugs. The rates of injecting drug use were too low to be confident about the direction of differences but suggest that there were lower rates of injecting drug use in rural populations. A Victorian survey of 8984 secondary school students identified similar patterns.[122] Non-metropolitan students in this study reported slightly greater use of tobacco, alcohol (ever drunk, regular drinking, and binge drinking), and solvents, about the same use of cannabis, and slightly less use of other illicit drugs relative to metropolitan students.

#### 9.6.6 Trends in age of initiation

Research from the National Drug and Alcohol Research Centre has suggested that the age of initiation of alcohol and other drug use has decreased among people born in successive decades ('birth cohorts') in Australia.[71, 154] For example, a study using data from the 1998 NDS survey examined the prevalence of lifetime use, and use by age 15 years, of a range of licit and illicit drugs, in nine five-year cohorts among persons born between 1940 and 1984.[154]

More recent birth cohorts were also likely to report first use of licit and illicit drugs at a younger age. Over half (56 per cent) of those in the 1980-84 birth cohort reported alcohol use by age 15 years, compared to 16 per cent of those in the 1940-44 birth cohort. Similarly, almost a third of those in the 1980-84 birth cohort (31 per cent) reported cannabis use by age 15 years, compared to under 4 per cent of those born in 1940-59. This pattern of initiation to cannabis use is illustrated in Figure 4. More recent birth cohorts had higher prevalence rates of use by age 21 years, with steeper lines indicating that greater numbers in these cohorts reported use at a younger age. These findings are consistent with trends in comparable western nations, such as the United States.[155]

Figure 4: Cohort trends in age of first cannabis use, 1998 NDS survey

### 9.6.7 Typical life course of drug use

Paglia and Room reviewed the literature on youth drug use and made the following observations about the life course of drug use:[5]

- Most adolescents try alcohol or illicit drugs, so experimentation is normative.
- Most who try alcohol or illicit drugs do not become problem users.
- One study has found that experimental users of cannabis had better psychological adjustment than frequent users and non-USCTS of cannabis.
- Use initiated in adolescence tends to decline in mid-to-late twenties.
- The idea that alcohol, tobacco and cannabis 'inevitably lead to harder drug use is basically an enduring myth, with historical TOOTS stemming from temperance times' (p. 7).

In sum, preventing any use is likely to be unrealistic and unnecessary. However, it is the minority who have problems with drug use with whom we are concerned.

### 9.6.8 Conclusions

Adolescence is a period of initiation of drug use. Most drug use tends to be non-problematic and to reduce in early adolescence.

The drugs used by the majority of adolescents are analgesics/painkillers, alcohol and tobacco. The next most commonly used drug is cannabis. Other illicit drug use is rare. This pattern reflects drug use among adults in Australia.

Tobacco use, hazardous alcohol use, and the use of most illicit drugs have increased among adolescent school students since 1990.

Variations exist due to gender, cultural background, occupation and geographic region.

## 9.7 Child and adolescent development

### 9.7.1 Theoretical perspectives on normal development

An understanding of normal child and adolescent development is necessary for ensuring interventions are developmentally appropriate. A variety of theories, such as those listed below, have historically been useful for understanding normal development and behaviour.

*Behavioural theory:* This was developed by Skinner, Pavlov and others and focuses on how behaviour is shaped by environmental rewards and punishments.

*Social-cognitive theory.* Bandura has emphasised 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.

Further details of these theories can be found elsewhere.[156, 157] No theory explains all youth behaviour, although each one gives some insight into how the individual and the environment interact to shape behaviour.

## 9.7.2 Adolescence

As drug use is typically initiated during adolescence, a brief outline of the nature of adolescence is provided. 'Adolescence' has been defined as 'the psychological response to the biological event of puberty within a particular social/environmental/cultural context' (p. 12).[158] There are certain tendencies that are normal for adolescents who increase the risk of substance ab/use. For example, adolescents tend to be risk takers because they feel invulnerable [159] or they at least underestimate risks,[160] have incomplete impulse control, and have a here-and-now orientation.[161] 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.[162] What accounts for these adolescent characteristics? Some explanation can be found in the notions of developmental tasks, in adolescent needs and in various psychosocial theories about human development.

### 9.7.2.1 *Developmental tasks*

Adolescence has been seen as a period of achieving a number of developmental tasks.[157, 158, 163, 164] These tasks relate to the development of a sense of identity [165] and include relationships with peers, emotional independence (including separation from parents), avocation, values and a sex-role identity. The nature of the specific developmental tasks of adolescents can vary from one culture to another [166] and across time. Success or failure in achieving these tasks has been regarded as crucial for the adolescent's ability to function in society. [163]

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.[167] Problems arise when adolescents do not have the opportunity to control the pace of their development at a rate that they can cope with.[167, 168] 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. See the body of this report (Section 2) for further description, analysis and discussion of developmental transitions during adolescence.

### 9.7.2.2 *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 outlined five needs that help to characterise adolescence.[158] These are a need for power, for autonomy and nonconformity, for freedom, for structure, and for peer acceptance. Environments that do not provide the opportunity for, or facilitate, adolescents to meet these needs in a positive way could find those adolescents coping poorly.

### *9.7.2.3 Implications for prevention*

Adolescence is a prime period for the uptake of drug use for numerous reasons. 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. 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.

The experience of many groups of young people in Australia today can be particularly conducive to drug use and drug use problems, particularly the disadvantaged such as the unemployed, rural youth and Aboriginal and Torres Strait Islander youth. Policies and specific prevention interventions need to understand and be sensitive to youth culture, the psychology of young people, and the impact of modern society on young people.

## 9.8 Reasons for drug use and abuse

### 9.8.1 Drug ab/use in context

Substance ab/use is not an isolated behaviour. It is one of a number of risk behaviours including substance abuse, withdrawal from school involvement, unprotected sexual intercourse and delinquency,[14] and psychosocial disorders, including conduct disorder, depressive disorders, eating disorders and suicidal behaviour,[8, 140] which share common aetiologies and which can co-exist and exacerbate each other. Failure to see substance ab/use 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, Rutter and colleagues have concluded from their research and review of other research that 'the use of drugs and alcohol did make the continuation in crime somewhat more likely and did predispose to employment instability and to a broader pattern of social difficulties' [169] The good news 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 overgeneralise. The relationship is probabilistic, so adolescents who engage in one problem behaviour do not always engage in other problem behaviours.[170]

## 9.8.2 Causality

The following definitions of risk and protective factors are based upon those provided by Homel and colleagues in relation to crime.[15] A *risk factor* for a behaviour (for example, alcohol abuse) is any factor that is associated with an increased likelihood of that behaviour. A *protective factor* is any factor that (a) reduces the impact of a behaviour, (b) helps individuals to not engage in the behaviour, (c) reduces the chances that individuals will engage in the behaviour, and/or (d) promotes an alternate pathway.

In reviewing the literature, it is essential to note that studies that identify a correlation between two variables are not necessarily able to establish a causal connection. A correlation between A and B could be because A causes B, B causes A, or both are caused by C. Where A and B are caused by C, C might be an underlying or mediating factor for a number of risk factors such as A and B. Homel and colleagues have discussed the importance of identifying a smaller set of important underlying or mediating factors to make sense of the long lists of risk and protective factors that can be generated for a given behaviour.[15]

Also, an association can exist in a specific population in a specific setting with a particular history at a particular point of time. However, the association might not exist for other populations, settings and so on. The issue of causality is further discussed elsewhere by Spooner in relation to predicting drug abuse among youth [171] and by Rutter in relation to explaining psychosocial disorders in young people.[172]

A second issue relating to causality that is pertinent to this review is the 'ecological fallacy' ' That is, the incorrect assumption that correlations that apply to groups will apply to individuals.[173] For example, unemployment creates psychosocial risks for individuals, but high rates of unemployment have not explained increases in psychosocial disorders since World War II.[174] This issue is further discussed by Rutter.[172]

In sum, when investigating causality, it is important to assess information in terms of the methodological rigour used to collect, analyse and interpret that information and to consider the limitations of that information in terms of its ability to be generalised.

## 9.8.3 Aetiology of use and abuse behaviours

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. Experimentation and infrequent drug use tend to be more related to peer and social factors, whereas drug abuse or dependence tends to be more associated with biological and psychological factors.[175, 176] Further, the specific reasons for particular drug use behaviours can be quite specific to a particular behaviour. For example, whether or not needles are shared could be related to the availability of clean injecting equipment.

It is beyond the resources of this report to provide a detailed review of the various risk factors for specific drug-use behaviours (e.g. initiation of smoking, heroin dependence, drink-driving, needle-sharing, binge drinking).

A summary of relevant reviews and models is provided below, as background to the broader discussion on structural factors in this report. The risk factors for psychoactive substance use disorders identified by Spooner are presented in 9.8.5.1. The risk and protective factors for antisocial and criminal behaviour, identified by Homel and colleagues' review, are presented in 9.8.5.2. Factors that promote resilience in individuals, despite adverse circumstances, were reviewed by Davis and summarised in 9.8.5.3. The risk and protective factors for adolescent health risk behaviour, identified by Jessor and colleagues, are presented in 9.8.5.4. Jason and Rhodes' Social Stress Model for identifying the multiple risk and protective factors for drug use is presented in 9.8.5.5. A synthesis of these re-views is provided in 9.8.6.

#### 9.8.4 Reasons for use – youth perspective

In their review, Paglia and Room divided the reasons for use into functional and symbolic reasons:

functional reasons: a form of rebellion or sensation-seeking, providing pleasure, alleviating boredom, satisfying curiosity, facilitating social bonding, attaining peer status, or as an escape/coping

symbolic reasons: expression of solidarity or to demarcate social boundaries.[5]

Spooner and colleagues' research has identified that different drugs tend to be used for different reasons by young people.[16] For example, young illicit drug users tended to report that they used alcohol to have fun, but that heroin was used to deal with problems. The reasons a particular drug is used in a particular manner at a particular time in a particular setting will be complex and variable. It is necessary, however, to consider youth's reasons for use when developing policy and planning interventions. For example, more constructive ways of having fun, dealing with problems, asserting maturity than drug use might need to be provided.

#### 9.8.5 Reviews and models of risk and protective factors

The risk and protective factors for youth drug use have been reviewed in a number of papers.[171, 177] Below is a summary of risk factors for drug abuse,[171] risk factors for antisocial and criminal behaviour, [15] and an overview of the concept of resilience.[76] Two models that incorporate the various risk and protective factors to explain drug use [178] and problem behaviour [14] are then summarised.

### 9.8.5.1 Risk factors for drug abuse

#### **Individual**

genetic predisposition: behavioural undercontrol  
personality: lack of social bonding,  
alienation, high tolerance of deviance  
resistance to authority  
knowledge about drugs  
coping skills  
commitment to education academic problems  
early age of first use

#### **Family**

ineffective parental family management  
techniques  
negative communication patterns  
poor family relationships  
parental role-modelling

#### **Local environment**

traumatic experiences e.g. child abuse, war, refugee camp  
socioeconomic status  
support (e.g. peers, community)  
peer influences  
labelling

#### **Macro-environment**

legislation  
law enforcement  
availability  
social 'messages' about use e.g. via the media  
Source: Spooner, 1999 [171]

### 9.8.5.2 Risk and protective factors for antisocial and criminal behaviour

Risk factors associated with antisocial and criminal behaviour

Child factors  
prematurity  
low birth weight  
disability  
prenatal brain damage  
birth injury  
low intelligence  
difficult temperament  
chronic illness  
insecure attachment  
poor problem solving  
beliefs about aggression  
attributions  
poor social skills  
low self-esteem  
lack of empathy

alienation  
hyperactivity/ disruptive behaviour  
impulsivity

**Family factors**

*Parental characteristics:*

teenage mothers.  
single parents  
psychiatric disorder, esp. depression  
substance abuse  
criminality  
antisocial models

*Family environment:*

family violence and disharmony  
marital discord  
disorganised, negative interaction/social isolation  
large family size  
father absence  
long-term parental unemployment

*Parenting style:*

poor supervision and monitoring of child  
discipline style (harsh or inconsistent)

**School context**

- school failure
- normative beliefs about aggression
- deviant peer group
- bullying
- peer rejection
- poor attachment to school
- inadequate behaviour management

**Life events**

- divorce and family break-up war or natural disasters death of a family member

**Community and cultural factors**

- socioeconomic disadvantage
- population density and housing conditions
- urban area neighbourhood violence and crime
- cultural norms concerning violence as acceptable response to frustration
- media portrayal of violence
- lack of support services
- social or cultural discrimination

Source: National Crime Prevention (1999), p. 136 [138]

Protective factors associated with antisocial and criminal behaviour

**Child factors**

- social competence
- social skills
- above-average intelligence
- attachment to family
- empathy
- problem solving
- optimism
- school achievement
- easy temperament
- internal locus of control
- moral beliefs
- values
- self-related cognitions
- good coping style

**Family factors**

- supportive caring parents family harmony
- more than two years between siblings responsibility for chores or required helpfulness
- secure and stable family supportive relationship with other adult
- small family size
- Strong family norms and morality

**School context**

- positive school climate
- pro-social peer group
- Responsibility and required helpfulness sense of belonging/ bonding opportunities for some success at school and recognition of achievement
- school norms re violence

**Life events**

- meeting significant person moving to new area

opportunities at critical turning points or major life transitions

**Community and cultural factors**

access to support services community networking

attachment to the community participation in church or other community group

community/cultural norms against violence

a strong cultural identity and ethnic pride.

Source: National Crime Prevention (1999), p. 138 [138]

### 9.8.5.3 Resilience

Resilience refers to the ability to be well adjusted and interpersonally effective in the face of an adverse environment.

Davis reviewed the literature on resilience and grouped the characteristics of resilient individuals into physical, social, cognitive, emotional, moral and spiritual competence.[76] The components of these areas of competence are briefly outlined below, followed by an outline of the protective processes.

#### **Physical competence:**

- good physical health and an easy temperament, which includes 'an equable mood, malleability, predictability of behaviour, mild to moderate intensity of emotional reactions, and an approaching style to new situations' (p. 321).[179]

#### Social and relational competence:

- secure attachment and basic trust: described by Fonagy and colleagues (cited by Davis) as 'Securely attached children demonstrate an expectation of an empathetic response while insecurely attached children tend to be anxious, fearful, or clingy and to see the world and other people as threatening'[180]
- the ability and opportunity to recruit actively people who can help, including adults and friends.

#### **Cognitive competence:**

- IQ and EQ
- language acquisition and reading
- the capacity to plan
- self-efficacy
- self-understanding and adequate cognitive appraisal

#### Emotional competence:

- emotional regulation
- ability to delay gratification
- realistically high self-esteem
- creativity and sense of humour

#### Moral competence:

- the ability and opportunity to contribute

#### Spiritual competence:

- .having faith that one's own life matters.

Davis reviewed studies of the protective processes in families, schools and communities that can promote resilience and noted that the protective factors in all three domains fall into the same three categories: caring relationships, high expectations, and opportunities to contribute. Some examples of specific processes are presented below.

Protective processes in families:

Kumpfer and Alder listed five major types of protective processes in families for the prevention of drug abuse: supportive parent-child relationships positive discipline methods monitoring and supervision family advocacy for their children seeking information and support for the benefit of their children.[1 81]

Protective processes in schools:

Davis describes the importance of schools in resilience, particularly in the acquisition of cognitive and social competencies. A series of studies were described that each proposed lists of recommendations for schools. For example, Henderson and Milstein made the following recommendations:

- increase pro-social bonding
- set clear, consistent boundaries
- teach life skills
- Provide caring and support
- set and communicate high expectations
- provide opportunities for meaningful participation.[182]

Protective processes in communities:

Characteristics of protective communities

include: [76]

- neighbourhoods with healthy institutions, such as schools, churches and youth organisations, which provide Positive role models for children as well as infrastructure for youth programs
- strong social networks in which adults are connected with each other.

Residents and individuals have a sense of control over key areas of their lives, for example, home ownership.



### 9.8.5.5 Social stress model

$$\frac{\text{(risk factors)} \\ \text{(Dis)stTess + normalisation + experience}}{\text{Attachments + skills + resources} \\ \text{(protective factors)}}$$

Figure 6: Social stress model

Jason and Rhodes' social stress model is useful because it illustrates the need to consider, for an individual or for a community, the balance of risk and protective factors for drug use when planning an intervention. The model includes consideration of the following risk and protective factors:

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 drug is affected by law enforcement, availability, price, advertising, media presentation, culture and peer norms.

Experience of drug use is affected by variables associated with the user (e.g. the user's expectations of effect); the drug (e.g. type of drug or how pure it is); and the setting (e.g. 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 (e.g. leadership) and 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 (e.g. intelligence) or external (e.g. family, adolescent workers).

The main problem with the model is that many factors are not just associated with risk or protection. For example, attachments can be risk factors if they contribute to drug ab/use, or protective if they discourage drug ab/use. However, the notion of looking at the full range of factors, minimising the risk factors and enhancing the protective factors to change the balance from risky to Protective, is useful.

### 9.8.6 Synthesis

A scan of the above reviews and models of risk and protective factors suggests:

there is a large number of factors involved in drug abuse and these other behaviours, at the individual, family, community and macro levels;

commonality between risk and protective factors for drug abuse, criminality and health risk behaviours.

interventions need to address the range of risk and protective factors. Models for planning >

interventions, on the basis of knowledge of risk and protective factors, are presented below.

## 9.9 Health promotion

### 9.9.1 Definition

Attention to structural **or** macro-environmental factors has been a part of health promotion for some time.[1 83] Health is defined in the preamble to the WHO constitution of 1948 as 'a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity' It has long been acknowledged that there are certain prerequisites for health, which include peace, adequate economic resources, food and shelter, clean water, a stable ecosystem and sustainable resource use. Recognition of these prerequisites highlights the links between social and economic conditions, the physical environment, individual lifestyles and health. These links provide the key to a holistic understanding of health that is central to the definition of health promotion.

### 9.9.2 Health promotion planning

Planning interventions requires more than identification of risk and protective factors. Effective planning methods are required. Various texts on health promotion planning methods include:

- conducting needs assessments: identifying all of the relevant risk factors, protective factors and available resources
- identifying and working with partners
- involving the target group
- defining clear, achievable objectives
- identifying strategies to achieve objectives and checking the viability of those strategies
- establishing monitoring and evaluation mechanisms
- identifying and monitoring possible side effects of any interventions.

Table 9: Health promotion framework for identifying factors associated with or contributing to a health problem

Factor	Some examples
Individual	Attitudes, knowledge, values beliefs
Social	Role models, social support
Environmental	Physical support, housing, transport
Health service	Availability, accessibility
Financial	Financial incentives for prevention
Political	Political self-efficacy, opportunities for participation in decision making
Legislative	Laws, regulations

Note: Based upon framework presented by Hawe, Degeling Et Hall [184]

Thus, identifying and analysing multiple risk and protective factors is not just the domain of drug prevention, but is common to the general field of health promotion. FOT example, Hawe, Degeling and Hall Provide a framework for identifying factors associated with or contributing to any health problem that is consistent with the risk and protective factors for drug ab/use identified in Table 9.

Further, Hawe and colleagues categorised these risk factors into contributing, enabling and predisposing risk factors, and argued that health promotion needs to cover all three types of factors to be effective:

- Predisposing: factors that predispose people to act in a certain way, e.g. knowledge and attitudes
- Enabling: factors that enable a behaviour or a situation to occur, e.g. availability of drugs
- Reinforcing: factors that reward or punish the carrying out of a behaviour or the maintenance of a situation, e.g. belief that smoking is 'cool'.

### 9.9.3 Target groups

The target group of health promotion interventions needs to be clearly specified. A method of describing target groups which is increasingly being used in public health interventions is as universal, selective or indicated groups.[186]

Universal: target entire populations (e.g. school students) with messages to prevent, or at least delay, use

Selective: target at-risk youth who are not yet using to prevent or delay use

Indicated: target those who are already using to prevent abuse, and target those who are abusing substances to prevent progression to further harms.

Macro-environmental risk factors can differentially affect selective and indicated groups and structural interventions can differentially impact upon these groups.

## 9. 1 0 Drug prevention strategies

Traditional drug Prevention strategies are briefly reviewed below.

### 9.10.1 Focusing on the individual

Drug prevention strategies that aim to change the behaviour of individuals have typically tried to do so by increasing fear, perceived risk of drug-related harm, psychological functioning, or social skills. Such programs have typically been implemented as school-based programs or media campaigns, although other settings and means have been used. The rationale and main problems with each of these approaches are summarised in Table 10.

The report card on interventions that rely upon intervening with young people to prevent drug use has not been good. This is not to say that they are useless or completely counterproductive. However, there are methods that have been repeatedly demonstrated to be ineffective or counterproductive that continue to be used (e.g. trying to scare young people about drugs), and others that can be effective that are not necessarily implemented in a 'best practice' manner (e.g. interactive rather than didactic methods) or are implemented with unrealistic objectives (e.g. single risk-factor approaches: relying upon a single intervention to inoculate youth from using drugs). See Paglia and Room [5] and Spooner [1 87] for guidelines for effective drug education.

Objective	Rationale	Efficacy and problem with this approach
To increase fear of drugs	Scaring youth about drugs will act as a deterrent.	Ineffective or counterproductive: Can increase attractiveness of drugs, as something risky, for some.
To increase perception of drug-related harms	Giving information about the risks and harms associated with drug use will cause youth to make informed decisions to not use drugs.	Ineffective or counter-productive if young people discover that information is incorrect or biased, the whole message is discarded.
To increase psychological health, particularly self-esteem	Young people use drugs because they have emotional problems or low self-esteem.	Ineffective or counterproductive: Low self esteem has not been found to be predictive of drug use or abuse, so the strategy is fundamentally flawed.
To increase social skills, particularly assertiveness	Young people who use drugs are pressured to use drugs as they lack the skills to resist peer pressure.	Ineffective or small, short term positive impact, depending upon quality of implementation.

Table 10: Objectives, rationale and problems with typical drug prevention strategies aimed at individuals  
Sources [5, 187]

## 9.10.2 Family interventions

Family interventions address significant risk factors for substance use and abuse: parent-child communication, parental role modelling, and parenting skills. They are problematic as a universal prevention strategy because of low participation, self-selection ('the worried well') and the high cost of such interventions. However, as a selective strategy for at-risk families, they appear to be a promising form of prevention.[28, 186]

Family interventions have particular value in the Influences Model (Figure 7) because of their ability to have direct influence on children, as well as their ability to mediate risk factors from the broader community. Family interventions might be more cost effective when they are considered in the light of the multiple benefits to children and society, rather than as drug prevention programs per se.[28]

## 9.10.3 Local community interventions

### 9.10.3.1 *Community mentoring programs*

Despite numerous evaluations showing no effect, community mentoring programs are seen as promising for reducing drug and alcohol use among 'at risk' children[188]

### 9.10.3.2 *Community-based recreation programs*

The impact of community-based recreation programs can **vary**, depending upon how they are implemented. They can be beneficial because they address the **risk** factors of alienation and association with antisocial peers, but they can also provide an opportunity for crime as victims and offenders interact. They can also provide an opportunity for socialisation with and between antisocial peers.[188]

Norman reviewed alternative-activities approaches, including sports, arts, entertainment or business ventures.[189] Norman concluded that these approaches tend to be not effective on their own, but could be an integral component of a larger intervention, particularly for high-risk youth, as it could provide opportunities for personal development and pro-social bonding.

### 9.10.3.3 *School policy*

After their review of the literature, Paglia and Room concluded that there is insufficient evidence on the components of the most effective school policy. However, it was recommended that a comprehensive policy be actively enforced and that schools have (or refer to) cessation/counselling Programs for abusers.[5]

#### 9.10.4 Comprehensive community approaches

Research and theoretical models suggest that multi-modal strategies are the most likely means of preventing drug use. Multi-modal strategies can address the multiple risk and protective factors for drug use in a coordinated, comprehensive and consistent manner. Ideally, they would involve a comprehensive needs assessment in a particular community and development and implementation of a range of strategies to reduce risk factors and promote protective factors as indicated by the needs assessment. The plan could include interventions targeting individuals (e.g. mass media and school-based interventions), the family (e.g. parent effectiveness training for at-risk families) and the community (e.g. revision of school policies relating to personal development and drug education, legislative changes, changes to law enforcement practices, improvements in sporting facilities, additional educational and vocational opportunities). However, planning, implementing and evaluating such strategies can be costly, time-consuming and difficult. Intersectoral cooperation on even a single intervention can be difficult, let alone on a comprehensive set of interventions. Consequently, there is not a large group of well-implemented and well-evaluated trials to demonstrate efficacy, let alone to specify the key strategies and best practice.

Two examples of multi-level community approaches have been described by Paglia and Room:

1. The Midwestern Prevention Program (MPP) included a school program, a parent program, mass media advertising, community organisation, and policy change to restrict access and availability.[190]
2. Project Northland was aimed at preventing alcohol use among adolescents. Phase 1 included a school-based program, a parent program, peer leadership of alcohol-free extracurricular activities, and community policy changes. Phase 2 included community organisation, parent education, youth action teams, media and a school curriculum.[191, 192]

Some positive results have been reported from evaluations of these projects, although methodological flaws have cast doubt over the MPP results. The cost-effectiveness of such large-scale programs is yet to be demonstrated.

### 9.10.5 Legislation and law enforcement

#### 9.10.5.1 *Legislation*

##### 9.10.5.1.1 Taxes

Paglia and Room's review concluded that, as adolescents are particularly price-sensitive, increasing the price of alcohol and cigarettes by increasing taxes has reduced initiation of use, consumption and harms among youth.[5] This is supported by Australian research relating to tobacco [ 1 93] and New Zealand research relating to alcohol.[ 194]

##### 9.10.5.1.2 Minimum purchasing age

Research on the increase of the legal drinking age in the United States, to 21, in the 1980s has indicated that those increases reduced drinking and drink-driving and other alcohol-related problems, such as suicide and injury, among youth. [5] Contrary to concerns at the time, alcohol use was, apparently, not replaced by cannabis use.

#### 9.10.5.1.3 Restrictions for new or young drivers

Lowering the legal blood alcohol limit has reduced fatal crashes.[5]

Graduated licensing is a strategy whereby new drivers have restrictions placed upon their driving for a period before they can obtain a full licence. These restrictions aim to reduce the risk factors for accidents, such as drink driving. Stipulations can include zero blood alcohol levels and a prohibition of driving at night. Evaluations to date suggest that graduated licensing has contributed to reduction in motor vehicle accidents and a reduction in drink-driving involving young drivers. [5]

#### 9.10.5.2 Low enforcement

Since the launch of the National Campaign against Drug Abuse in 1985, there has been increased collaboration between the police and the health sector in addressing drug and alcohol problems.[195, 196] There are many law enforcement activities that relate to drug prevention, including random breath testing, enforcement of liquor laws [197] and diversion.[198] Law enforcement strategies have been criticised, particularly in the context of illicit drug use. For example, police crackdowns have been described as inconsistent with harm minimisation.[199] As with any Strategy, law enforcement cannot be said to work' or to 'not work' - it depends upon the specific strategy plan and implementation. Taking a broader view, Sherman reviewed crime prevention Strategies in the United States. While not specific to drug and alcohol prevention in Australia, Sherman's conclusions do provide a relevant overview of the efficacy of policing strategies:

The connection of policing to risk factors is the most powerful conclusion reached from three decades of research. Hiring more police to provide rapid 911 responses, unfocused random patrol, and reactive arrests does not prevent serious crime. Community policing without a clear focus on crime risk factors generally shows no effect on crime. But directed patrols, proactive arrests and problem solving at high-crime 'hot spots' has shown substantial evidence of crime prevention. Police can prevent robbery, disorder, gun violence, drunk driving and domestic violence, but only by using certain methods under certain conditions (p. 360). [188]

In sum, some law enforcement Strategies are more effective than others, just as some health promotion strategies are MOTE effective than others.

#### 9.10.5.3 Availability

Access to substances in the home has been found to be associated with use of cigarettes, alcohol and marijuana among students.[5]

#### 9.10.5.4 Conclusions

Following their review of legal and regulatory approaches to drug prevention among youth, Paglia and Room noted that such approaches were evaluated with the most methodologically sound manner producing consistently positive results.[5] They cautioned, however, that such approaches can only shape behaviour, not eliminate it. They also cautioned against focusing on legal approaches that criminalise youth drug use and create a large number of criminals. Such an approach can incur administrative and social problems. Paglia and Room also noted that criminalising the sellers of illegal drugs has a drawback in that the government has no ability to regulate sales to minors and to regulate price (-via taxation) with illegal drug sales.

### 9.10.6 Harm reduction approaches

Given (a) the lack of success in achieving drug abstinence among young people, and (b) the socially normative nature of drug use, particularly alcohol use, in society, harm reduction approaches have been adopted.[4] Harm reduction is also generally easier to implement and evaluate, because the objectives relate to behaviour change that can be measured in the short term within a specific target group. For example, Paglia and Room's review identified that some positive results have been found with the following strategies:[5]

- promoting agreements between parents and children that the child will ring the parent for a lift rather than get into a car with a driver who has been drinking;
- motivational interviewing with feedback on risk reduction among university students who drank frequently and drank at least five drinks on one occasion in the previous month or who reported experiencing at least three alcohol-related problems on 3-5 occasions;
- environmental interventions such as first aid at rock concerts.

### 9.11 A model of influences on drug use behaviour

A conceptual model was developed to assist with the task of defining 'structural factors' ' The 'Influences Model', presented in Figure 7 was derived from previous research on risk and protective factors for drug use and other problem behaviours (summarised in 9.8.5). A range of factors that span a continuum from individual to macro-environmental factors has been found to influence drug use behaviours:

- individual factors, which involve and affect only the individual (e.g. genetic factors)
- family factors, which involve and affect siblings and other relatives (e.g family functioning, family-level SES)
- local environmental factors, which affect and involve others in the local community (e.g. peers, the school environment, community-level SES and resources)
- macro-environmental factors, which involve and affect the broader community (e.g. legislation, social capital). Macro-environmental factors can also be divided into State, national and international influences.

Each level of influence has direct and indirect influence upon other levels of influence and upon drug use behaviour. Indirect influence refers to the ability of closer sources of influence to buffer or mediate more distant sources of influence. For example, the family can influence the peers with which a young person associates, hereby influencing that local-community influence.

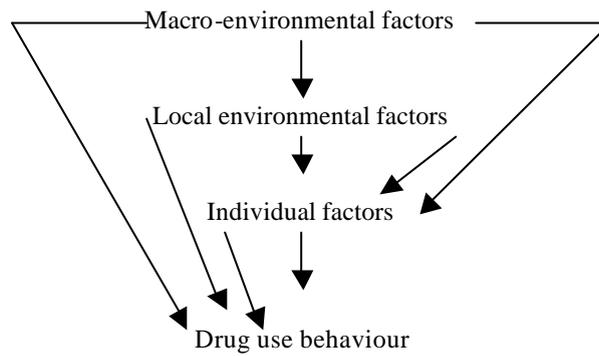


Figure 7: Influences Model

Similarly, peers can influence a young person's attitudes towards legislation and law enforcement. Influences can be bi-directional, in that the individuals can influence their family, peers, school and even the macro-environment. The arrows in Figure 7 are depicted as unidirectional because it is the downward influences upon drug use behaviours that are the focus of this report.

Given the national and State/Territory levels of audience for this report, our focus is on the macro-environmental-level risk factors (social, cultural, physical and economic influences on drug use), which are most subject to influence by State/Territory and national policy and programs.

## 10. References

1. Keating, D. (1999). Developmental health as the wealth of nations. In *Developmental Health and the Wealth of Nations: Social, biological, and educational dynamics*, D. Keating and C. Liertzman (eds). New York: Guildford Press, pp.337-347.
2. National Research Council and Institute of Medicine, Committee on Integrating the Science of Early Childhood Development, and J.P. Shonkoff and D.A. Phillips (eds) (2000). *From Neurons to Neighborhoods: The Science of Early Childhood Development*. Washington DC: National Academy Press.
3. Acheson, D. (1999). *Independent Inquiry into Inequalities in Health: Report*. London: HM Stationery Office.
4. Commonwealth Department of Health (1999). *National Drug Strategic Framework 1998-99 to 2002-03*. Canberra: the Department.
5. Paglia, A. and R. Room (1998). *Preventing Substance-use Problems among Youth: A literature review and recommendations* (ARF Research Document Series no. 142). Toronto: Addiction Research Foundation.
6. Bauman, A. and P. Phongsavan (1999). 'Epidemiology of substance use in adolescence: Prevalence, trends and policy implications' *Drug and Alcohol Dependence* 55(3): 187-207.
7. Victorian Department of Human Services, Public Health Division (1999). *The Victorian Burden of Disease Study: Mortality* (Health Intelligence Series. vol. 3). Melbourne: the Department.
8. Rutter, M. and D.J. Smith (eds) (1995). *Psychosocial Disorders in Young People: Time trends and their causes*. Chichester, England: John Wiley and Sons.
9. Beaglehole, R. and R. Bonita (1998). Public health at the crossroads: which way forward? [Miscellaneous]. *The Lancet* 351(9102): 590-592.
10. Eckert, R. (2000). Taking the prize or paying the price? Young people and progress (draft). In *Youth Mental Health Promotion* (working title book in preparation). Unpublished.
11. MacIntyre, S. (1997). The Black Report and beyond: What are the issues? *Social Science and Medicine* 44(6): 723-745.
12. Advisory Council on the Misuse of Drugs (1998). *Drug Misuse and the Environment*. London: HM Stationery Office.
13. Dryfoos, J. (1990). *Adolescents at Risk: Prevalence and prevention*. Oxford: Oxford University Press.
14. Jessor, R. (ed.) (1998). *New Perspectives on Adolescent Risk Behaviour*. Cambridge: Cambridge University Press.
15. National Crime Prevention (1999). *Pathways to Prevention: Developmental and early intervention approaches to crime in Australia*. Canberra: Attorney-General's Department.

16. Spooner, C., R. Mattick and J. Howard (1996). *The Nature and Treatment of Adolescent Substance Abuse* (NDARC Monograph no. 26). Sydney: University of New South Wales, National Drug and Alcohol Research Centre.
17. Keating, D. and C. Hertzman (1999). Modernity's paradox. In *Developmental Health and the Wealth of Nations: Social, biological, and educational dynamics*. D. Keating and C. Hertzman (eds). New York: Guildford Press, pp. 1- 18.
18. Hertzman, C. (1999). Population health and human development. In *Developmental Health and the Wealth of Nations: Social, biological, and educational dynamics*. D. Keating and C. Hertzman (eds). New York: Guildford Press, pp. 21-40.
19. Cynader, M.S. and B.J. Frost (1999). Mechanisms of brain development: Neuronal sculpting by the physical and social environment. In *Developmental Health and the Wealth of Nations: Social, biological, and educational dynamics*. D. Keating and C. Hertzman (eds). New York: Guildford Press, pp.153-184.
20. Suomi, S.J. (1999). Developmental trajectories, early experiences, and community consequences: Lessons from studies with rhesus monkeys. In *Developmental Health and the Wealth of Nations: Social, biological, and educational dynamics*. D. Keating and C. Hertzman (eds). New York: Guildford Press, pp.185-200.
21. Coe, C.L. (1999). Psychosocial factors and psychoneuroimmunology within a life span perspective. In *Developmental Health and the Wealth of Nations: Social, biological, and educational dynamics*. D. Keating and C. Hertzman (eds). New York: Guildford Press, pp. 201-219.
22. Keating, D. and F. Miller (1999). Individual pathways in competence and coping: From regulatory systems to habits of mind. In *Developmental Health and the Wealth of Nations: Social, biological, and educational dynamics*. D. Keating and C. Hertzman (eds). New York: Guildford Press, pp. 220-234.
23. Smith, D.J. (1995). Living conditions in the twentieth century. In *Psychosocial Disorders in Young People: Time trends and their causes*. M. Rutter and D.J. Smith (eds). Chichester, England: John Wiley and Sons, pp. 104-193.
24. Leffert, N. and A. Peterson (1995). Patterns of development during adolescence. In *Psychosocial Disorders in Young People: Time trends and their causes*. M. Rutter and D.J. Smith (eds). Chichester, England: John Wiley and Sons, pp. 67-103.
25. Hess, L.E. (1995). Changing family patterns in Western Europe: Opportunities and risk factors for adolescent development. In *Psychosocial Disorders in Young People: Time trends and their causes*. M. Rutter and D.J. Smith (eds). Chichester, England: John Wiley and Sons, pp. 104-193.

26. Eckersley, R. (2000). *Cultural Correlates of Youth Suicide*. Canberra: Unpublished paper submitted for publication.
27. Schneider, J. (1999). *The Increasing Financial Dependency of Young People on Their Parents* (Discussion Paper no. 96). Sydney: University of NSW, Social Policy Research Centre. Downloaded from World Wide Web <http://www.sprc.unsw.edu.au/dp/index.htm> (7 June 2000).
28. Karoly, L.A. et al. (1998). *Investing in Our Children: What we know and don't know about the costs and benefits of early childhood interventions*. Santa Monica, CA: RAND.
29. Gregory, R.G. and B. Hunter (1995). *The Macro Economy and the Growth of Ghettos and Urban Poverty in Australia: The National Press Club Telecom Address*. (Discussion Paper no. 325). Canberra: Australian National University, Centre for Economic Policy Research.
30. Parham, D. et al. (2000). *Distribution of the Economic Gains of the 1990's* (Productivity Commission Staff Research Paper). Canberra: Ausinfo.
31. United Nations (1996). *Human Development Report 1996*. New York: Oxford University Press.
32. King, A. (1998). Income poverty since the early 1970's. In *Australian Poverty: Then and now*. R. Fincher and J. Nieuwenhuysen (eds). Melbourne: Melbourne University Press.
33. Eckersley, R. (1999). Assessing human progress - Is life really getting better? *Futurist* 33(1): 23-26.
34. Eckersley, R. (1998). Redefining progress: Shaping the future to human needs. *Family Matters* 51: 6-12.
35. Keating, D. and C. Hertzman (eds) (1999). *Developmental Health and the Wealth of Nations: Social, biological, and educational dynamics*. New York: Guildford Press.
36. Yen, I.H. and S.L. Syme (1999). The social environment and health: A discussion of the epidemiologic literature. *Annual Review of Public Health* 20: 287-308.
37. Kennedy, B.P. et al. (1999). Income distribution, socioeconomic status, and self-rated health in US: Authors ignored data in their study: Authors' reply. *British Medical Journal* 318(7195): 1418.
38. Fiscella, K. and P. Franks (1997). Poverty or income inequality as predictor of mortality: Longitudinal cohort study. *British Medical Journal* 314(7096): 1724-1727.
39. Wilkinson, R.G. (1997). Socioeconomic determinants of health: Health inequalities: relative or absolute material standards? *British Medical Journal* 314(7080): 591-595.
40. Kennedy, B.P. et al. (1998). Income distribution, socioeconomic status, and self-rated health in the United States: multilevel analysis. *British Medical Journal* 317(7163): 917-921.

41. Coburn, D. (2000). Income inequality, social cohesion and the health status of populations: the role of the liberalism. *Social Science and Medicine* 51 (1): 135-146.
42. Stilwell, F. (1 999). *Globalisation: How did we get to where we are? (and where con we go now?)*. Paper presented at the Public Health Association of Australia conference, Darwin, 1999. Downloaded from the World Wide Web <http://www.pha.org.au/> (1 5 July 2000). Canberra: Public Health Association of Australia.
43. Wilkinson,R.G.(1999).Health, hierarchy, and social anxiety. *in Socioeconomic Status and Health in Industrial Nations*, pp. 48-63.
44. Kawachi, I., B.P. Kennedy and R.G. Wilkinson (1 999). Crime: social disorganization and relative deprivation. *Social Science and Medicine* 48(6): 719-731.
45. Lochner, K., I. Kawachi and B.P. Kennedy (1 999). Social capital: a guide to its measurement. *Health & Place* 5(4): 259-270.
46. Winter, I. (2000). *Towards a Theorised Understanding of Family Life and Social Capital* (Working Paper no. 21) Downloaded from the World Wide Web [http://www.aifs.org.au/institute/pubs/M2\\_1.pdf](http://www.aifs.org.au/institute/pubs/M2_1.pdf) (1 9 July 2000). Melbourne: Australian Institute of Family Studies.
47. Winter, I. (ed.) (2000). *Social Capital and Public Policy in Australia*. Melbourne: Australian Institute of Family Studies.
48. Kawachi, I., B. Kennedy and R. Glass (1999). Social capital and self-rated health: A contextual analysis. *American Journal of Public Health* 89(8): 1187-1193.
49. Kawachi, I. and B.P. Kennedy (1 999). Income inequality and health: Pathways and mechanisms. *Health Services Research* 34(1): 215-227.
50. Onyx, J. and P. Bullen (2000). Sources of social capital. In *Social Capital and Public Policy in Australia*. I. Winter (ed.). Melbourne: Australian Institute of Family Studies, pp.105-135.
51. Kawachi, I. (1 999). Social capital and community effects on population and individual health. *In Socioeconomic Status and Health in Industrial Nations*, pp. 120-130.
52. Baum, F. et al. (2000). Families, social capital and health. In *Social Capital and Public Policy in Australia*. I. Winter (ed.). Melbourne: Australian Institute of Family Studies, pp.250-275.
53. Cox, E. and P. Caldwell (2000). Making policy social. In *Social Capital and Public Policy in Australia*. I. Winter (ed.). Melbourne: Australian Institute of Family Studies, pp. 43-73.
54. Hughes, P., J. Bellamy and A. Black (2000). Building social trust through education. In *Social Capital and Public Policy in Australia*. I. Winter (ed.). Melbourne: Australian Institute of Family Studies, pp. 225-249.

55. Lyons, M. (2000). Non-profit organisations, social capital and social policy in Australia. In *Social Capital and Public Policy in Australia*. 1. Winter (ed.). Melbourne: Australian Institute of Family Studies, pp.165-191
56. Latham, M. (2000). 'If only men were angels': Social capital and the Third Way. In *Social Capital and Public Policy in Australia*. 1. Winter (ed.). Melbourne: Australian Institute of Family Studies, pp. 192-224.
57. Fergusson, D.M., L.J. Horwood and M.T. Lynskey (1 997). The effects of unemployment on psychiatric illness during young adulthood. *Psychological Medicine* 27(2): 371-381.
58. Vinson, T. (1 999). *Unequal in Life: The distribution of social disadvantage in Victoria and New South Wales*. Richmond, Vic: Jesuit Social Services.
59. Vinson, T., M. Abela and R. Hutka (1 998). *Making Ends Meet: A study of unemployed young people living in Sydney*. Sydney: Uniya Jesuit Social Justice Centre
60. Mitchell, W., M. Watts and J. Burgess (2000). *Job Creation Unemployment and Inequality in Australia* (CofFEE Working Paper no. 00-03). Newcastle: University of Newcastle, Centre of Full Employment and Equity
61. Stuart, G.L. and L.H. Price (2000). Recent developments in populations at risk for substance abuse. *Current Opinion in Psychiatry* 13(3) 315-320.
62. Makela, P. (1999). Alcohol-related mortality as a function of socioeconomic status. *Addiction* 94:867-886.
63. Van Oers, J.A.M. et al. (1 999). Alcohol consumption, alcohol-related problems, problem drinking, and socioeconomic status. *Alcohol and Alcoholism* 34: 78-88.
64. Hanna, E.Z. -and B.F. Grant (1999). Parallels to early onset alcohol use in the relationship of early onset smoking with drug use and DSM-IV drug and depressive disorders: Findings from the National Longitudinal Epidemiologic Survey *Alcoholism Clinical Experimental Research* 23: 513-522.
65. Fergusson, D., M. Lynskey and J. Horwood (1 994). Childhood exposure to alcohol and adolescent drinking patterns. *Addiction* 89: 1007-1016.
66. Fergusson, D. and J. Horwood (1997). Early onset cannabis use and psychosocial adjustment in young adults. *Addiction* 92: 219-296.
67. Grant, B.F. and D.A. Dawson (1 997). Age at onset of alcohol use and its association with DSM-IV alcohol abuse and dependence: Results from the National Longitudinal Alcohol Epidemiologic Survey. *Journal of Substance Abuse* 9: 103 -1 1 0.
68. Grant, B. and D. Dawson (1 998). Age of onset of drug use and its association with DSM-IV drug abuse and dependence: Results from the National Longitudinal Alcohol Epidemiological Survey. *Journal of Substance Abuse* 10: 163-173.

69. Kruder, S., H. Dayal and A. Mutgi (1999). Age at smoking onset and its effect on smoking cessation. *Addictive Behaviors* 24: 673-677.
70. Lewinshohn, P., P. Rohde and R.A. Brown (1999). Level of current and past adolescent cigarette smoking as predictors of future substance use disorders in young adulthood. *Addiction* 94(6): 913-921.
71. Lynskey, M. and W. Hall (1998). Cohort trends in age of initiation to heroin use. *Drug and Alcohol Review* 17:289-297.
72. Brook, J.S., E.B. Balka and Whiteman (1999). The risks for late adolescence of early adolescent marijuana use. *American Journal of Public Health* 89: 1549-1554.
73. Turrell, G. et al. (1999). *Socioeconomic Status and Health: Towards a national research program and a policy and intervention agenda*. Brisbane: Queensland University of Technology School of Public Health.
74. Wadsworth, M.E.J. (1997). Changing social factors and their long-term implications for health. *British Medical Bulletin* 53(1): 198-209.
75. Bouchard, C. (1999). The community as a participative learning environment: The case of the Centraide of Greater Montreal 1,2,3 Go! Project. In *Developmental Health and the Wealth of Nations: Social, biological, and educational dynamics*. D. Keating and C. Hertzman (eds). New York: Guildford Press, pp. 311-321.
76. Davis, N. (1999). *Resilience: Status of the Research and Research-Based Programs* (draft, 28 May 1999). Rockville, MD: Substance Abuse and Mental Health Services Administration, Centre for Mental Health Services, Division of Program Development, Special Populations & Projects, Special Programs Development Branch. Downloaded from the World Wide Web: <http://www.mentalhealth.org/specials/schoolviolence/5-28Resilience.htm> (13 April 2000).
77. Halpern, D. (1995). Values, morals and modernity: The values, constraints and norms of European youth. In *Psychosocial Disorders in Young People: Time trends and their causes*. M. Rutter and D.J. Smith (eds). Chichester, England: John Wiley and Sons, pp. 324-387.
78. Eckersley, R. (1997). Psychosocial disorders in young people: On the agenda but not on the mend. *Medical Journal of Australia* 166(8): 423-424.
79. Eckersley, R. (1996). The west's deepening cultural crisis. *Surgical Neurology* 45(4): 394-398.
80. Wartella, E. (1995). Media and problem behaviours in young people. In *Psychosocial Disorders in Young People: Time trends and their causes*, M. Rutter and D.J. Smith (eds). Chichester, England: John Wiley and Sons, pp. 296-323.

81. Bittman, M. (1999). *Social Participation and Family Welfare., The money and time costs of leisure* (Discussion Paper no. 95). Sydney: University of NSW, Social Policy Research Centre. Downloaded from the World Wide Web <http://www.sprc.unsw.edu.au/dplindex.htm> (7 June 2000).
82. Australian Bureau of Statistics (2000). *Australia Now - A Statistical Profile. Population. Country of birth*. Downloaded from the World Wide Web on 7 November 2000. <http://www.abs.gov.au/Ausstats/>.
83. Australian Bureau of Statistics (2000). *Australia Now - A Statistical Profile. Population. Languages*. Downloaded from the World Wide Web on 7 November 2000. <http://www.abs.gov.au/Ausstats/>.
84. Collins, R.L. (1992). Methodological issues in conducting substance abuse research on ethnic minority populations. *Drugs and Society* 6: 59-77.
85. Delgado, M. (1990). Hispanic adolescents and substance abuse: Implications for research treatment and prevention. In *Ethnic Issues in Adolescent Mental Health*. A.R. Stiffman and L.E. Davis (eds). Newbury Park, CA: Sage, pp.303-320.
86. Szapocznik, J. et al. (1986). Bicultural effectiveness training (BET): An intervention modality for families experiencing intergenerational/intercultural conflict. *Hispanic Journal of Behavioural Science* 6(4): 303-330.
87. Resnicow, K. et al. (2000). Cultural sensitivity in substance use prevention. *Journal of Community Psychology* 28(3): 271-290.
88. Rissel, C., L. McLellan and A. Bauman (2000). Social factors associated with ethnic differences in alcohol and marijuana use by Vietnamese-, Arab- and English-speaking youths in Sydney, Australia. *Journal of Paediatrics and Child Health* 36(2): 145-152.
89. Bertram, S. and B. Flaherty (1992). *Alcohol and Other Drug Use, Attitudes and Knowledge amongst Vietnamese-Speakers in Sydney*. Sydney: NSW Drug and Alcohol Directorate.
90. Bertram, S. and B. Flaherty (1993). *Alcohol and Other Drug Use, Attitudes and Knowledge amongst Spanish-Speakers in Sydney and Wollongong*. Sydney: NSW Drug and Alcohol Directorate.
91. Pham, T.M. (1993). *Alcohol and Other Drug Issues within the Khmer Community of Sydney*. Sydney: Drug and Alcohol Multicultural Education Centre.
92. Jukic, A., N. Pino and B. Flaherty (1996). *Alcohol and Other Drug Use, Attitudes and Knowledge amongst Arabic-Speakers in Sydney*. Sydney NSW Drug and Alcohol Directorate-
93. Taylor, S. and M. Toms (2000). *Drink Driving in the Italo-Australian Community of New South Wales: A qualitative investigation of contexts*. Sydney: Drug and Alcohol Multicultural Education Centre.

94. Resnick, M.D., et al. (1997). Protecting adolescents from harm: Findings from the National Longitudinal Study on Adolescent Health. *Journal of the American Medical Association* 278 (10): 823-832.
95. Ames, G.M., J.W. Grube and R.S. Moore (2000). Social control and workplace drinking norms: A comparison of two organizational cultures. *Journal of Studies on Alcohol* 61(2): 203-219.
96. Malone, K. (2000). Dangerous youth: Youth geographies in a climate of fear. In *Researching Youth*. J. McLeod and K. Malone (eds). Hobart: Australian Clearinghouse for Youth Studies, pp. 135-148.
97. Viasluck, L. and K. Malone (1999). Location, leisure and lifestyle: Young people's retreat to the home environment. In *Through the Eyes of the Child: Revisioning children as active agents of family life*. C. Shchan (ed.). Stamford: JAI Press, pp.177-196.
98. Patterson, I. and S. Pegg (1999). Nothing to do: The relationship between 'leisure boredom' and alcohol and drug addiction: Is there a link to youth suicide in rural Australia? *Youth Studies Australia* 18(2): 24-28.
99. Maher, C. (1992). *Mobility and Locational Disadvantage within Australian Cities: Social justice implications of household relocation*. Canberra: AGPS.
100. Australian and New Zealand Youth Ministers (1993). *A National Youth Policy: A statement of principles and objectives*. Canberra: AGPS.
101. Winter, I. (1995). *Young People Living on the Urban Fringe*. Hobart: Australian Clearinghouse of Youth Studies.
102. Baume, P. and M. Clinton (1997). Social and cultural patterns of suicide in young people in rural areas. *Australian Journal of Rural Health* 5: 115-120.
103. Alcohol and Drug Foundation Queensland (1999). Drug problems in the bush. *Alcohol and Drug Networking Newsletter*, January.
104. White, R. (1994). Street life: Police practices and youth behaviour. In *The Police and Young People Australia*. R. White and C. Alder (eds). Melbourne: Cambridge University Press.
105. Malone, K. and L. Hasluck (1998). Geographies of exclusion: Young people's perceptions and use of public space. *Family Matters* 49: 21-26.
106. Malone, K. (2001). Children, Youth and Sustainable Cities (Editorial). *Local Environment* 6(1): 5-12. Special issue: Children, youth and cities.
107. White, R. (1999). Young people, drugs and the criminal economy. *Youth Studies Australia* 18(1): 29-36.

108. Bushway, S. and P. Reuter (2000). Labor markets and crime risk factors. In *Preventing Crime: What works, what doesn't, what's promising? A report to the United States Congress*. L.W. Sherman et al. (eds). National Institute of Justice. Downloaded from the World Wide Web <http://www.ncjrs.org/works/> (12 April 2000).
109. Malone, K. (1999). Growing Up in Cities as a model of participatory planning and 'place-making' with young people. *Youth Studies Australia* 18(2): 17-23.
110. Kawachi, I. and B.P. Kennedy (1997). Socioeconomic determinants of health. 2. Health and social cohesion: Why care about income inequality? *British Medical Journal* 314(7086): 1037-1040.
111. Smith, G.D. et al. (1998). Individual social class, area-based deprivation, cardiovascular disease risk factors, and mortality: the Renfrew and Paisley study. *Journal of Epidemiology and Community Health* 52(6): 399-405.
112. Bobashev, G.V. and J.C. Anthony (1998). Clusters of marijuana use in the United States. *American Journal of Epidemiology* 148(12): 1168-1174.
113. Petronis, K.R. and J.C. Anthony (1999). Paths of 'transmission' of cocaine use and perceived risk of cocaine use within U.S. neighborhoods. *American Journal of Epidemiology* 149(11): S43.
114. Vinson, T. and R. Home] (1975). Crime and disadvantage: The coincidence of medical and social problems in an Australian city. *British Journal of Criminology* 15(1): 21-31.
115. Newman, P. (2000). 'Human settlements: Health and the physical environment' Paper presented at *Social Origins of Health and Wellbeing: From the Planetary to the Molecular*, 19 July 2000, Canberra. Canberra: Health Inequalities Research Collaboration.
116. Australian Bureau of Statistics (2000). *Australia Now - A Statistical Profile. Population*. Downloaded from the World Wide Web <http://www.abs.gov.au/Ausstats/> (7 November 2000).
117. Fergusson, D., L. Horwood and M. Lynskey (1994). Parental separation, adolescent psychopathology, and problem behaviors. *Journal of the American Academy of Child and Adolescent Psychiatry* 33(8): 1122-1133.
118. Sokol-Katz, J., R. Dunham and R. Zimmerman (1997). Family structure versus parental attachment in controlling adolescent deviant behaviour: A social control model. *Adolescence* 32: 199-215.
119. Barrett, G. (1999). *Sole Parents, Income Support and Family Wellbeing* (Discussion Paper no. 41/1). Canberra: Australian National University, Centre for Economic Policy Research.

120. Frager, L. (2000). 'Health differentials: The city and the bush'. Paper presented at *Social Origins of Health and Well-being: From the Planetary to the Molecular*, 19 July 2000, Canberra. Canberra: Health Inequalities Research Collaboration.
121. Hall, W. et al. (1 999). The 12-month prevalence of substance use and ICD-10 substance use disorders in Australian adults: Findings from the National Survey of Mental Health and Well-Being. *Addiction* 94: 1541-1550.
122. Bond, L. et al. (2000). *Improving the Lives of Young Victorians in our Community: A survey of risk and protective factors*. Melbourne: University of Melbourne, Centre for Adolescent Health.
123. Ross, J. et al. (2000). Submission to House of Representatives Standing Committee on Family and Community Affairs: Inquiry into Substance Abuse in Australian Communities. Sydney: National Drug and Alcohol Research Centre (Unpublished paper).
124. Forero, R. et al. (1 999). Substance use and socio-demographic factors among Aboriginal and Torres Strait Islander school students in New South Wales. *Australian and New Zealand Journal of Public Health* 23(3): 295-300.
125. Higgins, K., M. Cooper-Stanbury and P. Williams (2000). *Statistics on Drug Use in Australia 1998* (Drug Statistics Series AIHW Catalogue no. PIIE 16). Canberra: Australian Institute of Health and Welfare.
126. Hunter, B. (2000). *Three Nations, Not One: Indigenous and other Australian poverty* Downloaded from the World Wide Web <http://www.anu.edu.au/caepr/> (1 8 July 2000). Canberra: Australian National University, Centre for Aboriginal Economic Policy Research.
127. Secretariat National Aboriginal and Islander Childcare (1 996). *Proposed Plan of Action for the Prevention of Child Abuse and Neglect in Aboriginal Communities*. Canberra: Australian Government Publishing Service.
128. Brady, M.A. (1993). Health issues for Aboriginal youth: Social and cultural factors associated with resilience. *Journal of Paediatrics and Child Health* 29, Suppl. 1: S56-59.
129. Schorr, L.B. and D. Schorr (1 989). *Within our Reach: Breaking the cycle of disadvantage*. New York: Anchor Books, Doubleday.
130. Roussos, S.T. and S.B. Fawcett (2000). A review of collaborative partnerships as a strategy for improving community health. *Annual Review of Public Health* 21: 369-402.
131. MacIntyre, S. (2000). Prevention and the reduction of health inequalities. *British Medical Journal* **320**: 1399-1400.
132. Marmot, M. (2000). Social determinants of health: From observation to policy. *Medical Journal of Australia* 172(8): 379-382.
133. Reid, A. (ed.) (1 998). *Going Public: Education policy and public education in Australia*. Deakin ACT: Australian Curriculum Studies Association.

134. Gerwitz, S., S. Ball and R. Bowe (1995). *Markets, Choice and Equity in Education*. Buckingham, Philadelphia: Open University Press.
135. Thrupp, M. (1999). *Schools Making a Difference: Let's be Realistic! School mix, school effectiveness and the social limits of reform*. Buckingham, Philadelphia: Open University Press.
136. Gradstein, M. and M. Justman (2000). Human capital, social capital, and public schooling. *European Economic Review* 44: 879-890.
137. Contractor, A. (2000). More students stay clear of university as fees rise. *Sydney Morning Herald*, 13 November: 7.
138. National Centre for Epidemiology and Population Health, Australian National University (1999). *Health Inequalities Research Collaboration: Framework Document*. Canberra: Unpublished.
139. Makkai, T. and J. McAlistair (1998). *Public Opinion towards Drug Policies in Australia, 1985-95*. Canberra: Commonwealth of Australia.
140. Schulenberg, J., J. Maggs and K. Hurrelmann (eds) (1997). *Health Risks and Developmental Transitions during Adolescence*. Cambridge: Cambridge University Press.
141. Ministerial Council on Drug Strategy (1998). *National Drug Strategic Framework 1998-99 to 2002-03. Building Partnerships: A strategy to reduce the harm caused by drugs in our community* Prepared for the Ministerial Council by a joint steering committee of the Intergovernmental Committee on Drugs and the Australian National Council on Drugs. Canberra: Commonwealth of Australia.
142. Mathers, C.D. et al. (2000). The Australian Burden of Disease Study: Measuring the loss of health from diseases, injuries and risk factors. *Medical Journal of Australia* 172: 592-596.
143. Hall, W., M. Lynskey and L. Degenhardt (1999). *Heroin Use in Australia: Its impact on public health and public order* (NDARC Monograph no. 42). Sydney: National Drug and Alcohol Research Centre.
144. Newcomb, M.D. and P.M. Bentler (1988). *Consequences of Adolescent Drug Use: Impact on the lives of young adults*. Newbury Park, CA: Sage Publications.
145. Newcomb, M. (1987). Consequences of teenage drug use: The transition from adolescence to young adulthood. *Drugs and Society* 1(4): 25-60.
146. Bentler, P. (1992). Etiologies and consequences of adolescent drug use: Implications for prevention. *Journal of Addictive Diseases* 11(3): 57.

147. Moon, L., P. Meyer and J. Grau (1999). *Australia's Young People: Their health and well-being 1999*. The first report on the health of young people aged 12-24 years by the Australian Institute of Health and Welfare (AIHW Cat no. PHE 19). Canberra: Australian Institute of Health and Welfare.
148. Wegman, D.H. and L.K. Davis (1999). Protecting youth at work. *American Journal of Industrial Medicine* 36(5): 579-583.
149. Rissel, C., L. McLellan and A. Bauman (2000). Factors associated with delayed tobacco uptake among Vietnamese/Asian and Arabic youth in Sydney, NSW. *Australian and New Zealand Journal of Public Health* 24(1): 22-28.
150. Chen, J. et al. (2000). Substance use in high school students in New South Wales, Australia, in relation to language spoken at home. *Journal of Adolescent Health* 26(1): 53-63.
151. Tang, K.C. et al. (1998). A longitudinal study of smoking in year 7 and 8 students speaking English or a language other than English at home in Sydney, Australia. *Tobacco Control* 7(1): 35-40.
152. Dunne, M.P. et al. (2000). Substance use by Indigenous and non Indigenous primary school students. *Australian and New Zealand Journal of Public Health* 24(5): 546-549.
153. Maher, L. et al. (1998). *Running the Risks: Heroin, health and harm in south-west Sydney*. Sydney: National Drug and Alcohol Research Centre.
154. Degenhardt, L., M. Lynskey and W. Hall (2000). *Cohort Trends in the Age of Initiation of Drug Use in Australia* (NDARC Technical Report no. 83). Sydney: National Drug and Alcohol Research Centre.
155. Johnson, R.A. and D. Gerstein (1998). Initiation of use of alcohol, cigarettes, marijuana, cocaine and other substances in US birth cohorts since 1919. *American Journal of Public Health* 88: 27-33.
156. Crain, W. (1985). *Theories of Development: Concepts and applications*. Englewood Cliffs, NJ: Prentice-Hall.
- 157.** Heaven, P. (1994). *Contemporary Adolescence: A social psychological approach*. South Melbourne: Macmillan Education Publishing.
158. Cavaiola, A. and C. Kane-Cavaiola (1989). Basics of adolescent development for the chemical dependency professional. In *Practical Approaches in Treating Adolescent Chemical Dependency: A guide to clinical assessment and intervention*, P. Henry (ed.). New York: Hawthorne Press, pp. 11-24.
159. Elkind, D. (1985). Egocentrism Redux. *Developmental Review* 5: 218-226.
160. Moore, S. and D. Rosenthal (1992). Australian adolescents' perceptions of health-related risks. *Journal of Adolescent Research* 7(2): 177-191.
161. Collins, J. (1993). Future challenges for behavioural research in adolescent health. *Journal of Paediatric and Child Health* 29 (Suppl. 1): S66-S71.

162. Greenberg, B. (1992). Issues in adolescent treatment. In *Proceedings of the 13th World Conference of Therapeutic Communities*, Athens, 1990. Athens: World Conference of Therapeutic Communities, pp.103-106.
163. Ilavighurst, R.J. (1972). *Development Tasks and Education*. 3rd ed. New York: McKay.
164. Newman, B. and P. Newman (1987). *Adolescent Development*. Columbus: Merrill Publishing Company.
165. Erikson, E. (1967). *Childhood and Society*. Harmondsworth: Penguin.
166. Hooker, K. (1991). Developmental tasks. in *Encyclopedia of Adolescence*, R. Lerner, A. Petersen, and J. Brooks-Gunn (eds). New York: Garland Publishing, pp. 228-231.
167. Coleman, J. (1989). The focal theory of adolescence: A psychological perspective. In *The Social World of Adolescents: International perspectives*, K. Hurrelmann and U. Engel (eds). Berlin: de Gruyter, pp. 43-56.
168. Coleman, J. and L. Hendry (1990). *The Nature of Adolescence*. 2nd ed. London: Routledge.
169. Rutter, M., H. Giller and A. Hagell (1998). *Antisocial Behavior by Young People*. New York: Cambridge University Press.
170. McKay, J. and S. Buka (1994). Issues in the treatment of antisocial adolescent substance abusers. *Journal of Child and Adolescent Substance Abuse* 3(2): 59-81.
171. Spooner, C. (1999). Causes of adolescent drug abuse and implications for treatment. *Drug and Alcohol Review* 18: 457-479.
172. Rutter, M. (1995). Causal concepts and their testing. In *Psychosocial Disorders in Young People: Time trends and their causes*. M. Rutter and DJ. Smith (eds). Chichester, England: John Wiley and Sons, pp. 7-34.
173. Marmot, M.G. (1998). Improvement of social environment to improve health. *The Lancet*, 351(9095): 57-60.
174. Rutter, M. and DJ. Smith (1995). Towards causal explanations of time trends in psychosocial disorders of young people. In *Psychosocial Disorders in Young People: Time trends and their causes*. M. Rutter and DJ. Smith (eds). Chichester, England: John Wiley and Sons, pp.782-808.
175. Glantz, M. and R.W. Pickens (eds) (1992). *Vulnerability to Drug Abuse*. Washington, DC: American Psychological Association.
176. Kaplan, H. and R. Johnson (1992). Relationships between circumstances surrounding initial illicit drug use and escalation of drug use: Moderating effects of gender and early adolescent experiences. in *Vulnerability to Drug Abuse*, M. Glantz and R.W. Pickens (eds). Washington, DC: American Psychological Association, pp.299-358.

177. Hawkins, J.D., M.W. Arthur and R.F. Catalano (1995). Preventing substance abuse. In *Building a Safer Society. Strategic approaches to crime prevention*, M. Tonry and D.P. Farrington (eds). Chicago: University of Chicago Press, pp.343-427.
178. Rhodes, J. and L. Jason (1 988). *Preventing Substance Abuse among Children and Adolescents*. New York: Pergamon Press.
179. Rutter, M. (1 987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry* 57(3): 316-331.
180. Fonagy, P. et al. (1 994). The Emanuel Miller Memorial Lecture 1992: The theory and practice of resilience. *Journal of Child Psychology and Psychiatry* 34(2): 231-257.
181. Kumpfer, K. and S. Alder (1998). Family interventions for the prevention of drug abuse: the need to disseminate research based programs with effective results. Draft paper, cited in Davis (1 998) [761].
182. Henderson, N. and M. Milstein (1 996). *Resiliency in Schools: Making it happen for students and educators*. Thousand Oaks, CA: Corwin Press.
183. Nutbeam, D. (1998). Health promotion glossary. *Health Promotion International* 13(4): 349-364.
184. Hawe, P., D. Degeling and J. Hall (1992). *Evaluating Health Promotion: A health worker's guide*. Sydney: MacLennan and Petty.
185. Green, L.W. and M.W. KTeuteT (1999). *Health Promotion Planning :An educational and ecological approach*. 3Td ed. Mountain View, CA: Mayfield.
186. KumpfeT, K.L. and G.B. Baxley(1 997). *Drug Abuse Prevention: What works?* Rockville, MD: National Institute on Drug Abuse.
187. Spooner, C. (1 998). *Primary Prevention of Psychoactive Substance-Related Harm: A review*. Sydney: Unpublished report commissioned by the World Health Organisation.
188. Sherman, L.W. (1997). Policing for crime prevention. In *Preventing Crime: What works, what doesn't, what's promising?* A report to the United States Congress, L.W. Sherman et al. (eds). National Institute of Justice. Downloaded from the World Wide Web <http://www.ncjrs.org/works/> (12 April 2000).
189. Norman, E. et al. (1997). Prevention programs reviewed: What works? In *Drug-free Youth: A compendium for prevention specialists*, E. Norman (ed.). New York: Garland Publishing.
190. Pentz, M.A. et al. (1 989). A multicomunity trial for primary prevention of adolescent drug abuse. *Journal of the American Medical Association* 261: 3259-3266.
191. Perry, C.L. et al. (1993). BackgrouTid, coliceptualization, and design of a community-wide research program on adolescent alcohol use: Project Northland. *Health Education Research: Theory and Practice* 8: 125-136.

192. Perry, C.L. et al. (1 996). Project Northland: Outcomes of a community-wide alcohol use prevention program during early adolescence. *American Journal of Public Health* 86: 956-965.
193. Alchin, T.M. and C. Lee (1 995). Some aspects of the demand for and supply of tobacco products concerning teenagers. *Addiction Research* 3(3): 199-219.
194. Zhang, J.F. and S. Casswell (1 999). The effects of real price and a change in the distribution system on alcohol consumption. *Drug and Alcohol Review* 18(4): 371-378.
195. Hansen, F. (1 995). The National Campaign against Drug Abuse: A law enforcement perspective. In *The National Drug Strategy: The first ten years and beyond*. Proceedings from the eighth National Drug and Alcohol Research Centre Annual Symposium, Sydney, November 1995. (National Drug and Alcohol Research Centre Monograph no. 27), P. Dillon (ed.). Sydney: National Drug and Alcohol Research Centre, pp. 180- 1 82.
196. McCreddie, R. (1 995). Law enforcement and the National Drug Strategy. In *The National Drug Strategy: The first ten years and beyond*. Proceedings from the eighth National Drug and Alcohol Research Centre Annual Symposium, Sydney, November 1995. (National Drug and Alcohol Research Centre Monograph no. 27), P. Dillon (ed.). Sydney: National Drug and Alcohol Research Centre, pp. 183-189.
197. Plant, M., E. Single and T. Stockwell (1997). Introduction: Harm minimisation and alcohol. In *Alcohol: Minimising the harm*, M. Plant, E. Single, and T. Stockwell (eds). London: Free Association Books, pp. 3-9.
198. Spoons T., C., W. Hall and R. Mattick (2000). *A Strategic Overview of the Diversion of Drug-related Offenders in New South Wales*. (NDARC Technical Report no. 96.) Sydney: University of NSW, National Drug and Alcohol Research Centre.
199. Maher, L. and D. Dixon (1 999). Policing and public health - Law enforcement and harm minimization in a street-level drug market. *British Journal of Criminology* 39(4): 488~512.
200. Chawla, I. (ed.) (2001). *Growing Up in an Urbanising World*. London: Earthscan (in press).
201. Hall, W., R. Room and S. Bondy (1998) Comparing the health and psychological effects of alcohol, cannabis, nicotine and opiate use. In W. Corrigall et al. (eds) *Cannabis and Health*. Toronto: Addiction Research Foundation.
202. Lechter, T. and V. White (1 999) *Australian Secondary Students' Use of Over-the-Counter and Illicit Substances in 1996* (NDS Monograph series, no. 33). Canberra: Commonwealth of Australia.

## 10. 1 Alphabetical guide to list of references

Abela, M. [59]	Casswell, S. [1 94]
Acheson, D. [3]	Catalano, R.F. [177]
Advisory Council on the Misuse of Drugs [12]	Cavajola, A. [1 58]
Alchin, T.M. [193]	Chawla, I. [200]
Alcohol and Drug Foundation Queensland [103]	Chen, J. [150]
Alder, S. [181]	Clinton, M. [102]
Ames, G.M. [95]	Coburn, D. [41]
Anthony, J.C. [112], [113]	Coe, C.L. [21]
Arthur, M.W. [177]	Coleman, J. [167], [168]
Australian and New Zealand Youth Ministers [100]	Collins, J. [161]
Australian Bureau of Statistics [82], [83], [116]	Collins, R.L. [84]
Balka, E.B. [72]	Commonwealth Department of Health [4]
Ball, S. [134]	Contractor, A. [137]
Barrett, G. [119]	Cooper-Stanbury, M. [125]
Baum, F. [52]	Cox, E. [53]
Bauman, A. [6], [88], [149]	Crain, W. [156]
Baume, P. [102]	Cynader, M.S. [19]
Baxley, G.B. [186]	Davis, L.K. [148]
Beaglehole, R. [9]	Davis, N. [76]
Bellamy, J. [54]	Dawson, D.A. [67], [68]
Bentler, P.M. [144], [146]	Dayal, H. [69]
Bertram, S. [89], [90]	Degeling, D. [184]
Bittman, M. [81]	Degenhardt, L. [143], [154]
Black, A. [54]	Delgado, M. [85]
Bobashev, G.V. [112]	Dixon, D. [199]
Bond, L. [122]	Dryfoos, J. [13]
Bondy, S. [201]	Dunham, R. [118]
Bonita, R. [9]	Dunne, M.P. [152]
Bouchard, C. [75]	Eckersley, R. [10], [26], [33], [34], [78], [79]
Bowe, R. [134]	Elkind, D. [159]
Brady, M.A. [128]	Erikson, E. [165]
Brook, J.S. [72]	Fawcett, S.B. [130]
Brown, R.A. [70]	Fergusson, D.M. [57], [65], [66], [117]
Buka, S. [170]	Fiscella, K. [38]
Bullen, P. [50]	Flaherty, B. [89], [90], [92]
Burgess, J. [60]	Fonagy, P. [180]
Bushway, S. [108]	Forero, R. [124]
Caldwell, P. [53]	Frager, L. [120]
	Franks, P. [38]
	Frost, B.J. [19]
	Gerstein, D. [155]
	Gerwitz, S. [134]
	Giller, V. [169]
	Glantz, M. [175]
	Glass, R. [48]

Gradstein, M. [136]	Kreuter, M.VV. [185]
Grant, B.F. [64], [67] [68]	King, A. [32]
Grau, J. [147]	Latham, M. [56]
Green, L.VV. [185]	LechteT, T. [202]
Greenberg, B. [162]	Lee, C. [193]
Gregory, R.G. [29]	Leffert, N. [24]
Grube, J.W. [95]	Lewinshohn, P. [70]
Hagell, A. [169]	Lochner, K. [45]
Hall, J. [ 184]	Lynskey, M.T. [57], [65], [71] 117], [143], [154]
Hall, W. [71], [121], [143] 154], [198], [201]	MacIntyre, S. [11], [131]
Halpern, D. [77]	Maggs, J. [140]
Hanna, E.Z. [64]	Maher, C. [99]
Hansen, F. [195]	Maher, L. [153], [199]
Hasluck, L. [97], [105]	Makela, P. [62]
Havighurst, R.J. [163]	Makkai, T. [139]
Hawe, P. [184]	Malone, K. [96], [97], [105], [106], [109]
Hawkins, J.D. [177]	Marrnot, M.G. [132], [173]
Heaven, P. [157]	Mathers, C.D. [142]
Henderson, N. [182]	Mattick, R. [16], [198]
Hendry, L.[168]	McA]lister, I.[139]
Hertzman, C. [17], [18], [35]	McCreadie, R. [196]
Hess, L.E. [25]	Mckay, J. [170]
Higgins, K. [125]	McLellan, L. [88], [149]
Homel, R. [114]	Meyer, P. [147]
Hooker, K. [166]	Miller, F. [22]
Horwood, L.J. [57], [65], [66], [117]	Milstein, M. [182]
Howard, J. [16]	Ministerial Council on Druqs Strategy [141]
Hughes, P. [54]	Mitchell, W. [60]
Hunter, B. [29], [126]	Moon, L. [147]
Hurrelmann, K. [140]	Moore, R.S. [95]
Hutka, R. [59]	Moore, S. [160]
Jason, L. [178]	Mutgi, A. [69]
Jessor, R. [14]	National Aboriginal and ]slander Childcare Secretariat [127]
Johnson, R.A. [155], [176]	National Centre for Epidemiology and Population Health, AN [138]
Jukic, A. [92]	National Crime Prevention [15]
Justman, M. [136]	National Research Council and Institute of Medicine [2]
Kane-Cavaiola, C. [158]	Newcomb, M.D. [144], [145]
Kaplan, H. [176]	Newman, B. [164]
Karoly, L.A. [28]	Newman, P. [115], [164]
Kawachi, I. [44], [45], [48], [49], [51], [110]	Norman, E. [189]
Keating, D. [1], [17], [22], [35]	Nutbeam, D. [183]
Kennedy, B.P. [37], [40], [44], [45], [48], [49], [110]	Onyx, J. [50]
Khuder, S. [69]	Paglia, A. [5]

Parham, D. [30]	Tang, K.C. [151]
Patterson, I. [98]	Taylor, S. [93]
Pegg, S. [98]	Toms, M. [93]
Pentz, M.A. [190]	Turrell, G. [73]
Perry, C.L. [191], [192]	United Nations [31]
Peterson, A. [24]	Van Oers, J.A.M. [63]
Petronis, K.R. [113]	Victorian Department of HumanServices [7]
Pham, T.M. [91]	Vinson, T. [58], [59], [114]
Phongsavan, P. [6]	Wadsworth, M.E J. [74]
Pickens, R.W. [175]	Wartella, E. [80]
Pino, N. [92]	Watts, M. [60]
Plant, M. [197]	Wegman, D.H. [148]
Price, L.H. [61]	White, R. [104], [107]
Reid, A. [133]	White, V. [202]
Resnick, M.D. [94]	Whiteman, M. [72]
Resnicow, K. [87]	Wilkinson, R.G. [39], [43], [44]
Reuter, P. [108]	Williams, P. [125]
Rhodes, J. [178]	Winter, I. [46], [47], [101]
Rissel, C. [881], [149]	Yen, I. H. [36]
Rohde, P. [70]	Zhang, J.F. [194]
Room, R. [5], [201]	Zimmerman, R. [118]
Rosenthal, D. [160]	
Ross, J. [123]	
Roussos, S.T. [130]	
Rutter, M. [81], [169], [172], [174], [179]	
Schneider, J. [27]	
Schorr, L.B. [129]	
Schulenberg, J. [140]	
Sherman, L.W. [188]	
Single, E. [197]	
Smith, D.J. [8], [23], [174]	
Smith, G.D. [111]	
Sokol -Katz, J. [118]	
Spooner, C. [16], [171], [187], [198]	
Stillwell, F. [42]	
Stockwell, T. [197]	
Stuart, G.L. [61]	
Suomi, S.J. [20]	
Syme, S.L. [36]	
Szapoczliik, J. [86]	