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Prevention Research Quarterly

CURRENT EVIDENCE EVALUATED

November 2007

ISSN 1832-6013

Prevention and early intervention of coexisting mental health and substance use issues

 **DF** Australian
Drug Foundation
• preventing drug problems •

 State Government
Victoria Department of
Human Services

Prevention Research Quarterly: Current evidence evaluated

ISSN 1832-6013

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The research in this publication represents work done on behalf of the DrugInfo Clearinghouse by the Centre for Youth Drug Studies (CYDS) at the Australian Drug Foundation. The work of CYDS in this research was supported by a Reference Group that included key stakeholders and advisory partners:

- Department of Human Services, Victoria
- DrugInfo Clearinghouse

The authors would like to acknowledge Craig Olsson, PhD, Developmental Psychology, VicHealth Research Fellow, American Education Foundation Investigator: National Alliance for Research on Schizophrenia and Depression (USA), Centre for Adolescent Health, Murdoch Childrens Research Institute, The University of Melbourne, Royal Children's Hospital for his review of this paper.

DrugInfo Clearinghouse is an initiative of the Australian Drug Foundation and the Victorian Government.

Prevention and early intervention of coexisting mental health and substance use issues

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Depressive symptoms are expected to be the second leading cause of disease burden in the Western world by 2020 (Lopez & Murray 1998). Current research shows that approximately 25 per cent of young people who present with a psychological disorder also present with a comorbid disorder, the most prevalent relating to substance misuse (Teesson, Hall, Lynskey & Degenhardt 2000). The longer term economic implications of failure to address mental health and substance use disorders are potentially enormous. Already mental health expenditure is around \$2 billion per year (Commonwealth of Australia 1996).

Individuals with comorbid disorders use more public services and are more dependent on welfare benefits than individuals with a single disorder (Australian Institute of Health and Welfare 2005; Teesson & Proudfoot 2003). Individuals with comorbid disorders are also more likely to develop a wide range of problems such as legal, relationship, family and financial difficulties (Osher & Kofoed 1989; Reis 1992). The Council of Australia Governments (COAG) has recently renewed its commitment to prevention, early detection and intervention in the areas of mental health and substance abuse, including illicit drugs (such as cannabis and amphetamine-type substances) and alcohol (Council of Australian Governments' Meeting 2006).

The relationship between mental health and alcohol and other drug issues is well-recognised but a corresponding need for synergy and partnership between the drug and alcohol and mental health sectors is lacking. The purpose of this paper is two-fold:

- Provide an overview of recent scientific evidence about comorbidity between psychological disorders (e.g. depression, anxiety and schizophrenia) and specific types of substances (e.g. cannabis, psychostimulants and alcohol).
- Present key examples of prevention and early intervention initiatives showing particular promise.

Comorbidity refers to "any distinct additional clinical entity that has existed or that may occur during the clinical course of a patient who has the index disease under study" (Feinstein 1970). The term can be applied to the co-occurrence of two or more psychological and/or physical health conditions. It is estimated that the lifetime prevalence of mental health disorder (excluding substance use disorders) is around 22–23 per cent and that around 29 per cent of those with a mental health disorder have a coexisting substance use disorder. (Andrews 1997; Bijl, Ravelli & van Zessen 1998; Fichter et al. 1996; Regier et al. 1990; Wang et al. 1992).

Causal relationships between psychological and substance use disorders have been broadly categorised into three main types: direct causation, indirect causation, and common aetiology.

Direct causation is where there is a clear relationship between substance misuse and mental disorder, or mental disorder and substance misuse. An example of direct causation might be self medication of depressive symptomatology (Khantzian 1985). Another example might be the effect of some drugs (e.g. cannabis and amphetamines) may trigger psychotic symptoms (e.g. cannabis or amphetamine psychoses) and other mental health problems, particularly for at-risk individuals (Arseneault, Cannon & Poulton 2002; Hall & Degenhardt 2000; Zammit, Allebeck & Andreasson 2002).

Indirect causation is where one disorder has an effect upon another factor that, in turn, increases the likelihood of developing the second disorder (Degenhardt, Hall and Lynskey 2003). For instance, there is some evidence to suggest that drug use can lead to financial strain (Orford 1998); this in turn may increase the likelihood of other problems, such as depression.

Common aetiology causation is where substance use and mental health disorders are brought about by one or more common factors. These can be biological (e.g. genetic factors), environmental and/or social risk factors, such as social disadvantages, family separation and low socio-economic levels (Caron & Rutter 1991; Eysenck & Eysenck 1991; Smit, Bolier & Cuijpers 2004).

Cannabis and mental health

Prevalence

Cannabis is the most widely used illicit substance in the general population. According to the 2005 National Household Survey, 11.3 per cent of Australians aged 14 years and older reported using cannabis during the previous 12 months (Australian Institute of Health and Welfare 2005).

Evidence of comorbidity

The relationship between cannabis and mental health has been on the agenda of the research community for many years, with most studies targeting the relationship between cannabis and psychosis/schizophrenia (Arseneault, Cannon & Poulton 2002;

Degenhardt & Hall 2001; Fergusson, Horwood & Swain-Campbell 2003; van Os, Bak & Bijl 2002) and, to a lesser extent, depression and anxiety (Arseneault, Cannon & Poulton 2002; Goodwin, Fergusson & Horwood 2004). However, there is evidence of comorbidity with mood disorders. Those diagnosed with a mood disorder are approximately 3–6 times more likely to have cannabis-related disorders (Andrews 1997; Grant & Harford 1995). The prevalence of anxiety disorders is 5.7 per cent within the general population compared with 17 per cent among those presenting with a cannabis dependence disorder (Degenhardt, Hall & Lynskey 2001).

Evidence of causation

In a prospective longitudinal study of adolescent health and wellbeing conducted in Victoria, frequent cannabis use during adolescence was found to be a strong predictor of depression and anxiety in young adulthood, particularly among daily users (Patton et al. 2002). In a 21 year longitudinal study conducted by Fergusson, Horwood & Swain-Campbell (2003) cannabis dependence at age 18 was found to be a strong predictor of psychotic symptoms in users at age 21. Chronic cannabis exposure has been associated with more persistent forms of psychiatric disorder, particularly schizophrenia (Degenhardt & Hall 2006; Hall & Degenhardt 2000).

Smit, Bolier & Cuijpers (2004) conducted a review of five population-based, longitudinal studies on the relationship between cannabis use and schizophrenia. They concluded that cannabis use may trigger schizophrenia in vulnerable groups (e.g. people with a family history of schizophrenia); however, antecedent use of cannabis may also be a risk factor for a later onset of schizophrenia in people with no previous family history of this illness (Smit, Bolier & Cuijpers 2004).

Alcohol and mental health

Prevalence

Alcohol is the most widely used psychoactive substance within the general Australian population, with 84 per cent of the population aged 14 years and over reporting having drunk alcohol at least once in the past 12 months and 9 per cent of Australians, having consumed it on a daily basis (Australian Institute of Health and Welfare 2005).

Evidence of comorbidity

Research with psychiatric populations has identified the coexistence of alcohol-related disorders with depression and anxiety (Hesselbrock 1991; Kovacs, Goldstein & Gatsonis 1993; Raimo & Schuckit 1998). However, research from psychiatric populations is limited in terms of ascertaining comorbidity of alcohol and mental health disorders within the general population.

Findings from the American National Comorbidity Study carried out in 1997 revealed that the probability of a major depressive disorder among respondents with a diagnosis of alcohol dependence was 28 per cent (Kessler et al. 1997). Within the alcohol dependence group, 37 per cent presented with at least one type of anxiety disorder (Kessler et al. 1997).

Similar findings have emerged from Australian studies. When controlling for other sociodemographic variables (gender, age, employment) one-third of participants with an alcohol-related disorder (dependence or abuse) also had at least one mental health disorder: anxiety, depression or other drug use disorder (Burns & Teesson 2002). In addition, 19 per cent of respondents with a mental health disorder also had an alcohol use disorder, either abuse or dependence. Clearly, mental health disorders are more common among people with alcohol-related disorders than among the general population.

Evidence of causation

Results from the Epidemiologic Catchment Area study carried out in the United States of America indicated that among those who had abused alcohol, 12.3 per cent also met the criteria for a mood disorder during the previous year (Regier et al. 1990). In a birth cohort study carried out by Fergusson, Lynskey & Horwood (1994) in New Zealand, relationships were found between alcohol abuse, depression, anxiety and suicidal behaviour.

Psychostimulants and mental health

Prevalence

Eleven per cent of students surveyed as part of the *Australian secondary school students' use of alcohol in 1999* survey, reported the use of amphetamine-like stimulants (White 2001). There was a 2 per cent increase in use compared with the results in 1996 (White 2001). Ecstasy is the third most commonly

used illicit drug in Australia (Degenhardt, Copeland & Dillon 2005), with approximately 1.2 million Australians aged 14 and over having used the drug at least once during their life (Australian Institute of Health and Welfare 2005).

Evidence of comorbidity

Both, amphetamine and methamphetamine have been associated with psychological symptoms such as depression, anxiety and psychotic behaviour (Baker, Lee & Jenner 2004). A range of psychological problems have been reported among chronic injecting amphetamine users, including mood swings (80 per cent), anxiety (72 per cent) and depression (71 per cent; Hall & Hando 1993). The emergence of "ice", a form of methamphetamine also known as "crystal meth", has also been linked to psychotic symptoms such as paranoia, hallucinations, anxiety and depression among Australians who use methamphetamines (Topp et al. 2002).

Evidence of causation

Evidence suggests that different types of psychostimulants can induce acute short-term states of panic, depression or psychosis. For instance, Montoya et al. (2002) found that people who use ecstasy tend to report a wide range of psychological side effects, including anxiety, depression, depersonalisation, confusion, hallucinations, panic attacks and paranoia. The most commonly reported symptoms are panic attacks/anxiety and toxic psychoses. Panic attacks tend to occur within the first hour of ecstasy ingestion (Williamson et al. 1997).

Soar, Turner & Parrott (2001) carried out a literature review of previously published psychiatric case studies (1991–2001) where ecstasy was used. They found that only 24 per cent of users who reported psychological difficulties had a history of psychiatric problems whereby 34 per cent indicated a family history of mental illness. This suggests that ecstasy use could be a factor in the manifestation of some psychiatric symptoms. More recently Dutch researchers carried out a 14 year longitudinal study on a sample of 1580 individuals, from childhood into adulthood (Huizink et al. 2006) in order to ascertain whether the use of ecstasy is preceded by psychological problems during childhood. Those with symptoms of anxiety or depression in childhood were more likely to use the

drug later on in life. These findings are also consistent with a previous study which found that individuals with anxiety disorders (e.g. phobias) at baseline were more likely to use ecstasy in the future (at 4 year follow-up; Lieb et al. 2002).

Vincent et al. (1998) found that approximately one-third of the people in their sample who used amphetamines reported symptoms of anxiety and depression before they began to use the drug with 25 per cent reporting symptoms of anxiety, depression and panic attack after they started to use the drug. They found a relationship between an increased severity of dependence and the number of psychological symptoms experienced by people who use amphetamines (Vincent, Schoobridge, Ask, Allsop & Ali 1998). However, as this was not a longitudinal design, these results should be interpreted with caution.

Prevention interventions

The Mental Health Intervention Spectrum is a widely used model comprising three main components: prevention, treatment and maintenance (Figure 1; Mrazek and Haggerty 1994). Prevention interventions aim to reduce the risk of the initial onset of a mental

disorder whereas treatment interventions aim to stop the progression of a condition or reduce its severity. Maintenance interventions focus on relapse prevention and the provision of rehabilitation solutions to patients. In practice, the line between prevention and treatment is vague as both components aim for early intervention with the dual purpose of prevention and minimising the severity of the condition. Another form of intervention that is applicable to the entire intervention spectrum is mental health promotion, which aims to improve the mental health and wellbeing of both the general population and individuals.

Traditionally, the focus of Australian mental health services has been mostly on treatment of severely mentally ill people (Raphael 2000a). However, compared with patients who present with either mental health or substance use disorders, the success rates for treatment of individuals with two or more psychological disorders are lower and these individuals are more likely to relapse after improvement in their condition (Hall 1996; Jaffe & Ciraulo 1986). There is an important need for an integrated approach that addresses the complexity of comorbidity (Dadds et al. 1997; Degenhardt, Hall & Lynskey 2003; Kosky & Hardy 1992).

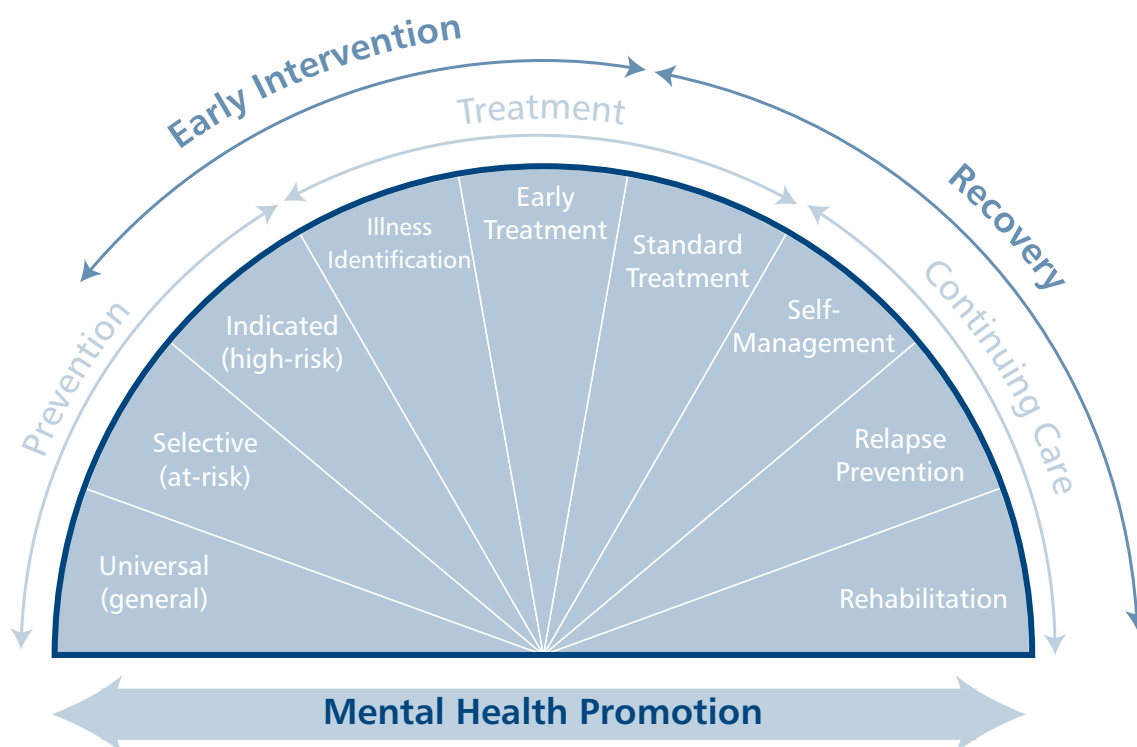


Figure 1: The mental health intervention spectrum (Mrazek & Haggerty 1994).

Universal, selective and indicated intervention strategies

Universal interventions are designed for the general population or a whole population group that has not been identified on the basis of individual risk. A large body of research supports universal interventions that aim to prevent alcohol and other drug-related problems (eg Raphael 2000a) and there is also some evidence for the effectiveness of universal interventions to prevent psychological disorders (Kolbe 1997; Raphael 2000b).

Selective interventions target individuals or at-risk groups. Characteristics such as age, gender, occupation or exposure to risk factors (e.g. single parenting) can be indicators for these groups (Commonwealth of Australia 1996).

Indicated interventions also known as early interventions, target individuals who are already presenting some early signs of psychological disorders or have genetic markers (e.g. family history) related to such conditions. At this early stage, however, such people do not yet meet the criteria of a mental disorder (Commonwealth of Australia 1996).

Because mood and substance use disorders typically occur in adolescence and young adulthood (Andrews & Wilkinson 2002), most prevention approaches focus on the child and adolescent years before early symptoms of disorder present (Andrews & Wilkinson 2002). Harm minimisation is a central component of prevention strategies in Australia and involves a focus on reducing risk factors and enhancing protective factors known to be associated with a particular disorder (Commonwealth Department of Health and Aged Care 2000; Commonwealth of Australia 1996; Dadds et al. 1997; Durlak 1995; Loxley et al. 2004).

Risk factors increase the likelihood that a disorder will occur. Protective factors are characteristics, variables and/or conditions present in individuals or groups that enhance resilience, increase resistance to risk and fortify against the development of a disorder or adverse outcome (Commonwealth of Australia 1996; Loxley et al. 2004). Prevention researchers use risk status to identify populations for intervention. They then try to reduce the influence of risk factors and to enhance the effect of protective factors. Thus, an indication of a successful intervention would be: the

degree of risk decreases, protective factors increase, the likelihood of onset of the potential problem also decreases (Resnick et al. 1997).

Interestingly, examination of multiple fields of prevention (e.g. mental health, drug use, physical health) suggests that there are a common set of risk and protective factors that influence children and families (Durlak & Wells 1997a). *Table 1* lists the common risk factors that influence the development of mental and substance use disorders. *Table 2* lists the common protective factors.

There are striking commonalities in risk and protective factor profiles for mental health and substance use outcomes. It follows that prevention of both outcomes should be able to be addressed by similar strategies. This is also reflected by the growing international support for a more comprehensive approach to the prevention of risk and for the promotion of positive mental health and youth development (Burton & Marshall 2005; Commonwealth Department of Health and Aged Care 2000; Commonwealth of Australia 1996; Jorm & Griffiths 2006; Loxley et al. 2004; Thompson 2005). There is some evidence that the risk focussed approach has reduced risk of drug use and enhanced school performance (Durlak & Wells 1997a,b).

Examples of successful prevention intervention strategies

Communities that Care—a universal community based intervention

Communities That Care (CTC) is a mental health promotion and prevention program based on the risk and protective paradigm. The program aims to prevent health and social problems such as crime and other antisocial behaviour by young people, drug and alcohol misuse and issues relating to school failure. The CTC assists communities in tailoring and implementing evidence-based strategies that are specifically relevant to their needs (World Health Organization 2004). The original CTC program has been implemented successfully in communities in the USA and is currently being adopted in Australia by the Centre for Adolescent Health (Hawkins, Catalano & Arthur 2002).

Table 1: Risk factors potentially influencing the development of mental health and substance use disorders

Individual	Family	School	Community	Life events
Difficult temperament	Poverty	Early school failure	Community disadvantages and disorganisation	Unemployment
Aggression	Family breakdown	Peer relationship (e.g. social isolation or relationship with peers who are involved in drug use)	Neighbourhood violence and crime	Trauma (e.g. physical, mental or sexual abuse)
	Parent and family substance use behaviours		War or natural disaster	Isolation
	Neglected in childhood			Family breakdown

Commonwealth of Australia 1996; Dadds et al. 2003; Durlak 1998; Durlak & Wells 1997a; Loxley et al. 2004

Table 2: Protective factors potentially influencing the development of mental health and substance use disorders

Individual	Family	School	Community	Life events
Easy temperament	Low parental conflict	Opportunities for positive social involvement—sense of belonging	Religious involvement	Economic security
Social and emotional competence	Family harmony	Opportunities for some success and rewards for achievements	A well-managed environment	Involvement with significant other adult person
	Family norms		Opportunities for positive social involvement—sense of belonging	

Commonwealth of Australia 1996; Dadds et al. 2003; Durlak 1998; Durlak & Wells 1997a; Loxley et al. 2004

The Gatehouse Project—a universal school based intervention

This project was developed by the Centre for Adolescent Health in Victoria. It integrates professional teams with backgrounds in education, psychology, psychiatry and health promotion (Glover et al. 1998). The primary aim of the project is to promote adolescents' mental health by creating an environment that increases feelings of wellbeing, security, a sense of belonging and positive feelings (Patton et al. 2000). The project provides schools with professional development tools and models to assist them to enhance their students' connectedness to the school, and to improve students' coping skills for everyday challenging situations (Cahill, Murphy & Hughes 2005). An evaluation of the project found improvements in health indicators, including a significant reduction in drug and alcohol intake. Interestingly, the Gatehouse Project demonstrated that a program that aimed to improve mental health and wellbeing had an impact on drug and alcohol intake (Patton et al. 2000).

Seasons for Growth—a selective intervention

Seasons for Growth is a national grief and loss program that provides young people with a better understanding and management of family grief (e.g. death, divorce, separation and other forms of serious loss). The program is based on extensively researched and evidenced psychological and health promotion theories (e.g. narrative theory, cognitive behaviour theory and resilience-building interventions). The primary goal of the project is to promote mental health, psychological competence and early intervention for "at risk" young people (Cahill, Murphy & Hughes 2005). It is a short-term peer support program that focuses on building individual and group resilience (Dowling 2003). Pre- and post test evaluation shows that participation in the program leads to improved use of positive coping strategies and reduction in negative coping techniques (Frydenburg & Muller 2005). Furthermore, Frydenberg and Muller (2005) found that the program provided children with the right coping skills to express their feelings on matters they had been previously unable to articulate.

Other promising prevention initiatives

A universal mental health literacy program

It has been argued that many Australians have minimal awareness of mental health issues (Jorm et al. 1997). This lack of knowledge, along with social stigma and negative attitudes towards mental health disorders all contribute to the delay in seeking help (Jorm & Griffiths 2006). Therefore, by increasing mental health literacy within the general population, the public can more effectively respond to mental health problems in the community (Jorm et al. 2004).

A universal self-help program

Jorm and Griffiths (2006) argue that there are many forms of self-help interventions that are suitable for population-wide dissemination; they are scientifically proven to be effective and they contain minimal risks for users (e.g. physical activity, cognitive behavioural therapy and relaxation techniques). In addition, web-based dissemination of informal self-help strategies is cost effective and found to be effective in the reduction of the symptoms of depression and anxiety (Jorm & Griffiths 2006). It is also evident that the community needs to be informed about ineffective self-help strategies, including the use of alcohol to relax (Jorm et al. 1997).

A national peak body for depression and related disorders: *beyondblue*

Beyondblue is a national, independent, not-for-profit organisation working to address issues associated with depression, anxiety and related substance misuse disorders in Australia. It is a bipartisan initiative of the Australian, state and territory governments with a key goal of raising community awareness about depression and reducing stigma associated with the illness. *Beyondblue's* five priorities are:

- Increasing community awareness of depression, anxiety and related substance misuse disorders and addressing associated stigma.
- Providing people living with depression and their carers with information on the illness and effective treatment options and promoting their needs and experiences with policy makers and healthcare service providers.

- ▶ Developing depression prevention and early intervention programs.
- ▶ Improving training and support for general practitioners and other healthcare professionals on depression.
- ▶ Initiating and supporting depression-related research.

While *beyondblue*'s main focus is depression and anxiety, they too recognise comorbidity, in particularly alcohol and depression, and as such, they played a key role in the development of *The National youth depression & alcohol review and action plan* (Hodges et al. 2005).

Beyondblue has attempted to improve depression literacy through widespread social marketing strategies. In an evaluation of their public awareness campaign, Pirkis (2004) found that almost 75 per cent of the sample studied agreed that *beyondblue* had increased the public's awareness of depression and reduced the degree of stigma associated with the illness.

Screening for the early intervention of comorbidity

During the past decade several standard assessment instruments have been developed for the purposes of identifying comorbidity for early intervention (Drug Strategies 2002). Examples of such screening instruments include:

- ▶ Substance Abuse Subtle Screening Inventory (Miller 1999)
- ▶ Problem Oriented Screening Instrument for Teenagers (Rahdert 1991)
- ▶ Personal Experience Screening Questionnaire (Winters 1991).

Each explores a range of problematic issues relating to mental health and substance use and are easy to use measures for evaluation (Drug Strategies 2002).

New directions in prevention of comorbidity in Australia

While early intervention programs that solely target mental health issues are currently available in Australia, less attention has been given to programs that address coexisting problems of mental illness and

drug use. Furthermore, the majority of mental health early intervention programs do not have an evaluation component and others have only limited evaluation (Davis et al. 2000).

There are however a number of new initiatives. For example, ORYGEN Research Centre, in conjunction with Youth Substance Abuse Service (YSAS), Drug and Alcohol Services Western Health (DASWest) and Youth Outreach Team in Victoria have recently commenced a research project that aims to develop an evidence-based assessment and treatment service for young people with comorbid disorders. In terms of early identification, the research team are attempting to develop screening tools that alcohol and other drug services can use to identify young people who are experiencing both drug use and mental illness.

As part of the project, drug and alcohol workers will be trained and supervised in aspects of mental health practice. The research is part of the Substance Use Research Recovery Focussed (SURRF) program that was established in order to investigate the aetiology of, and potential treatment for, substance use disorders among young people with or without mental illness.

In another research project undertaken by Turning Point Alcohol and Drug Centre, a mental health screening tool and comorbidity intervention has been developed and trialled within alcohol and other drug treatment services. The aim of the screening tool, known as PsyCheck, is to increase the detection of mental health problems among drug and alcohol patients.

Headspace is Australia's recently formed National Youth Mental Health Foundation. It was established out of the recognition of the need to respond more effectively to young people with mental health and alcohol and other drug issues. A major initiative of *headspace* is the Youth Services Development Fund which aims to create new models for delivering mental health services to young people and to build the capacity of local communities to identify and provide early and effective responses to young people with mental health and alcohol and other drug issues. Other priorities and initiatives of *headspace* include:

- ▶ collecting and building on the best available evidence-based practice in young people's mental health through the Centre of Excellence
- ▶ encouraging early help seeking by young people with mental health and substance use issues through local and national community awareness activities
- ▶ assisting a range of service providers who work with young people to build their skills through education and training resources and initiatives.

The recent commitment to *headspace*, National Youth Mental Health Foundation, and the range of early intervention initiatives being funded, will see this area expand in both service and practice but also, with the research of these initiatives, the evidence base will be developed.

Conclusions

Comorbidity has been associated with poor prognosis and heavy costs for individuals, families and society, and there is an increasing need to provide efficient and effective prevention, early intervention and treatment programs. In Australia the recent COAG agenda highlights the political will and commitment to this. There is a clear need for further research into comorbidity, including rigorous evaluations of comorbidity interventions. Research is needed not only to further understand the comorbid presentation of alcohol and other drug and mental health problems, but also to determine the most effective prevention, early intervention and treatment approaches. The common theoretical underpinning of the risk and protective paradigm offers one model for prevention programs within the mental health and drug and alcohol sectors. Rather than programs focusing on alcohol or cannabis, or depression or suicide, there clearly needs to be greater coordination between sectors. In addition, while mental health awareness and literacy, self-help tools and screening tools for professionals are identified as early intervention strategies there is a need to evaluate these programs to ascertain the most effective approaches and the impact they have on people's mental health and drug and alcohol use.

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