

PREVENTION OF DEPRESSION IN YOUNG PEOPLE: AN AUSTRALIAN PERSPECTIVE

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Summary

Prevention of depression in young people needs to adopt a twofold approach, prevention of illness based on risk factors and mental health promotion focusing on social and emotional wellbeing. This article describes the supportive policy context and resource base in Australia and the public health conceptual framework that exists.

For young people, within this approach, action involves awareness raising and prevention as well as a focus on strengths, resilience and capacity building of organizations to work in ways that support young people. Universal and targeted preventive interventions are described including MindMatters a national mental health promotion program for secondary schools and innovative internet based strategies. These demonstrate that the prevention of depression in young people requires complex, multi-level strategies.

Key Words: Prevention of depression – Young people – Risk factors – Mental health

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Introduction

The effective prevention of depression in young people needs to be placed within the wider public health framework of mental health promotion, prevention and early intervention (Commonwealth Department of Health and Aged Care [CDHAC] 2000a). In 2000 the Australian National Action Plan for Depression (CDHAC 2000b) was launched as part of the Australian national government's Second National Mental Health Plan 1998-2003 (CDHAC 1998). The multi-pronged national policy was supported by state level policies and actions (viz Vic Health 1999, New South Wales 1999). The depression action plan was the governmental response to the recognition of the burden of disease by 2020 from the impact of depression on individuals and communities (Murray and Lopez 1996). This context of nearly 14 years government mental health policy and concomitant resource allocation has shaped and impacted on practices Australia wide. Recent capacity mapping for mental health promotion in four European countries did not find this breadth of action (Lopis 2005). Whilst the researchers did identify policies about mental health, it was established that mental health promotion was less a priority than the policies indicated, with low levels of resources available in all but one of the countries. There are some areas of inaction in Australia, but unlike other countries there is a breadth of policy and practice in mental health promotion in Australia. Whilst as yet financial resources are insufficient for services for young people with de-

pression, with only 7% of funding for mental health services spent on young people (CDHAC 2000c), activities across the spectrum are occurring. Linked to the National Action Plan for Depression (CDHAC 2000b) is "A Framework for Prevention of Suicide and Self Harm" (CDHAC 2000d). For young people, within this policy and strategic approach, concern has not only been about service provision, but early intervention, awareness raising and prevention. Additionally, unlike many other countries' approaches, mental health promotion, focussing on mental health and well being (rather than mental illness) for populations as well as individuals, has been an integral component. This expands the more traditional clinical, service models to actions that address whole populations, settings and determinants of mental health as well as depression.

This article is constructed from the position of a supportive policy context as well as within a public health conceptual framework of mental health promotion, prevention and early intervention (CDHAC 2000a). It explores prevention of depression in young people from mental health promotion, prevention and early intervention perspectives.

Prevalence

Depression is one of the major public health problems of the 21st century. One fifth of young people worldwide, under the age of 18 years suffer from developmental, emotional and behavioural problems, one

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in eight has a mental disorder (WHO 2001). Depression has been identified as the number one cause of disease burden in Australian young people, ahead of medical conditions such as asthma and diabetes (Al-Yaman et al. 2002). A significant minority of children and particularly adolescents in Australia, experience depressive and anxiety symptoms with 3% of 4 to 11 year olds and 4% of 12 to 16 year olds showing evidence of depression and anxiety when rated by parents and teachers (Zubrick et al. 1995). Prevalence is higher in adolescents when assessed by self-report measures ranging from 25% to 40% depending on the measure and cut-off used (Peterson et al. 1993). This is consistent with international epidemiological data of child and adolescent populations, 3-30% (Verhulst & Koot 1992). Young people are becoming depressed at higher rates and earlier ages than ever before, a trend of great social and economic concern (NHMRC 1997). Whilst the social and economic impacts of depression in young people are important there are additional reasons for concern. Davis et al. (2000) identify that childhood disorders are strongly predictive of difficulties in later life and if not treated may persist resulting in continued loss of well being. Depression in young people is associated with a range of adverse psychosocial and health outcomes, including problems with family and peers, academic under-achievement, unemployment, increased risk of substance use and abuse and higher rates of suicidal behaviour (Fergusson and Woodward 2002). Importantly, depression tends to be a recurrent illness, with earlier age of onset being associated with more frequent and numerous successive episodes, as well as higher rates of comorbidity with other serious mental health problems in adolescence and adulthood (Cicchetti and Toth 1998).

Alarming problems seem to be on a "downward developmental trend" (Zubrick et al. 2000) with mental health problems and disorders affecting younger age children. That is, the beginnings of mental health problems in children and young people have signalled a major public health problem (Davis et al. 2000). If symptoms first evident in childhood and adolescence persist and progress, not only is the future of the young person affected but the impact on families and the ongoing burden for society is a serious concern.

In Australia, the highest prevalence of mental health disorders of 27% is in young adults aged 18-24 years (Andrews et al. 1999). The wider impact of these mental disorders is due to the developmental disruption and disabling effect arising from the concomitant educational, vocational and life transitions. In all developmental domains (social, emotional, physical and cognitive) major life changes are occurring that have significant impact into adulthood. As Kosky and Hardy conclude:

Starting during adolescence, mental illness will have its main impact during the years of an individual's greatest potential for learning and productivity. Unemployment and frustration are often a consequence of interruptions to education and work experience (Kosky and Hardy 1992, 147).

The 2001 World Health Report indicates the economic cost of mental illness is enormous but not readily measurable (WHO 2001). In this 'cost' they not only include health and social service costs but also the longer term costs of lost employment, reduced produc-

tivity; the impact on families and caregivers, the levels of crime and public safety as well as stigma and discrimination (WHO 2004a). That is, many health and social problems are connected, addressing mental health has impacts wider than for the health sector. There are links in etiological data internationally that show connections between factors that affect mental health and factors associated with crime (National Crime Prevention 1999), drug abuse (Resnick et al. 1997) and academic achievement (Zubrick et al. 1997). These factors include school attendance, connectedness to school and community, and opportunities for success at school. The resultant multidisciplinary interests involving varying ideologies, language and practice move mental health and depression into other disciplinary areas (Rowling 2002). In this context the horizontal linking of practice, research and development of policy, benefits from drawing on the different sectors' perspectives (Rowling and Taylor 2005). Importantly a recent WHO report (2004b) recommends programs "should address multiple outcomes" (p. 53).

Due to the high personal, social and economic cost of depression, Australian State and Federal Governments have identified the prevention of depression as a high priority. In particular, early intervention for children manifesting early signs and symptoms of depression has been targeted as amongst the key strategies for promoting mental health and preventing mental health problems and disorders in children and adolescents (Commonwealth Department of Health and Aged Care 2000a, NSW Health 1999, Vic Health 1999).

The causes of depression in young people are complex and it is probable that there are multiple pathways to the development of depression. The main models of etiology posit a stress-diathesis hypothesis in which stress interacts with a predisposition within the young person to produce depression (Stark et al. 1999). Stressors may be acute or chronic in onset and include a range of forms from major life events (eg, loss of a parent) to everyday difficulties (eg, bullying). The diathetic conditions that are proposed vary from biological (eg, genetic predisposition from having a depressed parent), cognitive (eg, negative cognitive schemata, pessimistic attributional style), behavioural, such as social skills deficits, to familial/environmental (eg poor relationships with family, rejection by peers). Given the complexity of these causal pathways, the focus for prevention has been to address risk factors and protective factors, which can be modified.

Given the prevalence of mental health problems such as depression in children, and the fact that early onset symptoms are associated with a poor prognosis for adolescent and adult social, emotional, health, educational and vocational outcomes, there is clearly an important role for mental health promotion, early intervention and prevention initiatives to help address these problems. Strategies to address depression in young people have moved to include a strong focus on prevention and mental health and well being as well as evidence based treatments (CDHAC 2000b) and to be of interest to a range of professional groups. The appeal of this is not only to reduce the health and social burden, but cost savings in human and financial terms for individuals, families and their communities.

Prevention science

Whilst acknowledging the achievements in mental health prevention science, recent reports are highlighting a number of limitations (WHO 2004b, Greenberg et al. 2001, Arthur and Blitz 2000). The limitations in the current science involve the focus on risk factors and 'single' issues; failure to consider prevention effects for whole populations; greater concern with treatment outcomes than prevention outcomes (such as fidelity of implementation); and the failure to account for the possibility of health and social multiple outcomes.

Prevention science has made significant advances in understanding the malleable risk and protective factors for the onset of depression (WHO 2004b). Much of the mental health prevention activity has focussed on reducing risk factors in individuals and families especially those affecting young people - home based individually focussed intervention programs being complemented by school focussed interventions that most frequently target individuals 'at risk'. Involving different sites, home and school could be seen as addressing different ecological levels as recommended by Durlak and Wells (1997). However the focus is still individuals and risk rather than families, schools and peers and protection and well being. A significant problem for the prevention science and policy field is the "compartmentalized approach to mental, social, behavioural and legal problems" (WHO 2004b, 53).

Another problem is that the current knowledge base for policy makers and planners from mental health prevention science, is that based on prevention strategies found to be effective in Randomised Control Trials (RCTs). These results are unlikely to readily translate to groups and settings that are different to the intervention groups' characteristics. This is a result of the tight research design necessary for an RCT, which involves randomly selected subjects or groups which are subjected to interventions and the outcomes compared with controls that have been randomly selected (Kerr et al. 1998). Transferable prevention action needs to combine knowledge from the science along with local characteristics. The dilemma created by this process, is that the intervention may have lost the elements that created the outcomes in the RCT. Thus evidence of the fidelity of implementation becomes an essential prevention outcome, along with the evidence of treatment outcome. Trial prevention programs must be able to identify the core elements for successful implementation. Utilising this knowledge along with local factors assists in accommodating the variation in cultural and economic conditions in interventions in new and diverse settings (WHO 2004b).

Prevention planners need to identify the needs and experiences of the target group, for example what helps and hinders young people's mental health and well being. Harden and colleagues as part of the systematic review on Young People and Mental Health (2001) studied research on barriers to, and facilitators of, good mental health amongst young people. They used a three level framework for reporting their findings. The resultant understandings are important for the development of effective interventions to maximise the connections of the preventive actions with young people's

lives. The barriers and facilitators were categorised at individual, community and societal levels. This broad framework is consistent with the approach recommended by Durlak and Wells (1997), recognising that mental health and mental disorders need to be conceptualised within communities of care and support, not solely as an individual's problem. A further delineation within each level indicates the breadth of issues that need to be considered when designing interventions for young people. At the individual level there were psychological factors (eg cognitive and emotional states), physical factors (physical health status) and life events (such as bereavement and parental separation). The community barriers and facilitators involve the social networks of family and interpersonal factors such as social relationships with peers and teachers. These individual and community barriers and facilitators are placed within a wider societal framework. They include socio-cultural (referring to social and cultural identities) and structural factors, the environment, political, financial and legal contexts. Whilst these separate levels and sub factors have been identified the researchers acknowledge that they do not stand as separate entities but inter-relate. For example the barriers and facilitators arising out of individual psychological factors may be a result of status in society such as a member of a stigmatised ethnic minority group. Effective interventions would target both individual well being and take action to strengthen social inclusion strategies. This requires multidisciplinary teams.

The emergence of the field of developmental psychopathology (Cicchetti 1990) merging knowledge about developmental milestones, transitions and sequences to clinical psychological and psychiatric treatment (Davis et al. 2000), may have inadvertently shifted the focus away from strengths, success and positive well being. This skewing of conceptualisation of issues, research and treatment has meant the phenomenon of children exposed to high levels of risk, who manage to thrive (Werner and Smith, 1982) has become secondary to a concentration on risk. In the last decade or so, there has been research and practice to re-dress this imbalance, particularly with a focus on protective factors, but these are often conceptualised in a risk framework, so that protective factors are seen as the converse of risk. That is, if young people 'at risk' are alienated from school then a protective factor is seen to be connectedness to school. But a study of alienation and a separate study of what happens to connect young people to school would identify different information, one is not necessarily the direct converse of the other (Rowling 2002). At the community level, the focus on developmental assets (Benson et al. 1998) among youth in a community, combined with an ecological approach that identifies a variety of levels for intervention (Durlak and Wells 1999), is broadening the concept of risk and protection and therefore the need to utilise both mental health promotion and prevention strategies.

Interventions for young people

The preadolescent period is a critical time to enhance children's resilience and coping skills. This period is a significant time of transition as children work

towards commencing high school and facing the physical, social and emotional challenges of puberty and adolescence. Longitudinal research has shown that children with clinical and sub-clinical levels of symptomatology at age 7 to 11, are at significantly higher risk of having a diagnosed mental health disorder in adolescence (Costello et al. 1999). Children at risk of later depression are not only those displaying current symptoms of depression, but also those with symptoms of anxiety (Cole et al. 1998), and those with behavioural difficulties (Brady and Kendall 1992). Rates of depression increase significantly around the ages of 13-15, particularly in girls (Goodyer et al. 1997), further supporting the importance of early intervention in the preadolescent period.

Developmentally, preadolescents are typically achieving competence in a range of higher-order cognitive skills, such as abstract and hypothetical reasoning, the ability to understand and use metaphors, and the ability to generalise and hypothesise about the future. Having access to these skills makes cognitive-behavioural approaches to early intervention not only appealing to children, but also a very effective way to enhance their coping and affect-regulation skills. The cognitive-behavioural model is based on the premise that distorted, negative thinking styles lead to negative feelings, which impact on behaviour. Characteristic thinking styles associated with depression include thinking in a polarised ("black and white") fashion, jumping to negative conclusions in the absence of evidence or disregarding contradictory evidence, over-generalising from specific examples/incidents, assuming inappropriate personal responsibility for events, attributing personal meaning or significance of events inappropriately, and having unrealistically high expectations of oneself and others. It is easily seen how these thinking styles can contribute to difficulties and distress in young people trying to negotiate academic, personal and social challenges and develop a sense of autonomy (Burns et al. 2002).

Cognitive behavioural universal prevention programs

Universal prevention programs are targeted at a whole population or community, and aimed at improving the overall mental health of all the individuals in that grouping. They offer the potential to overcome some of the issues of stigmatisation and labelling associated with the early intervention programs and are capable of reaching individuals with a broad range of risk factors rather than being limited to single risk factors (Offord 2000). Universal interventions have also been associated with greater participation rates and lower dropout than selective or indicated interventions (Shochet et al. 2001).

Shochet and colleagues (2001) evaluated a school-based 11-session universal program based on elements of cognitive-behavioural therapy and interpersonal psychotherapy with 260 high school students, aged 14-15. The student participation rate was 88% and a psychologist delivered the program in small groups. Students who completed the program showed a significant reduction in self-reported depressive symptoms, which

were not demonstrated by the monitoring only group. The intervention group at 10-month follow-up maintained this significant reduction in depressive symptoms.

A large controlled study by Spence et al. (2003) of 1500 students examined the impact of an 8-session universal depression prevention program designed to teach problem-solving skills, positive problem-solving orientation and optimistic thinking styles when delivered weekly in a classroom setting by teachers. All students in each intervention classroom received the program but the evaluation is based on the 66% students who received consent to complete the evaluation procedures. Intervention group students with initially high scores on depression showed a significant reduction in symptoms at post-intervention when compared to controls. Intervention group students with initially low scores on depression also showed significant, albeit small reduction in depression scores at post-intervention compared to controls, who reported an increase in depressive symptoms over that period. These results were not maintained at 12-month follow-up.

Cognitive-behavioural early intervention/prevention programs

Along with universal prevention programs there is a growing body of evidence from Australia and overseas supporting the beneficial effects on short and long term outcomes, of prevention and early intervention programs for depression in young people (WHO 2004b). There are number of targeted programs, that is, *selective, indicated* prevention or *early intervention* programs (CDHAC 2000a), which are aimed at individuals who are either showing the early symptoms of depression (indicated prevention/early intervention) or are selected because there are at greater risk of developing depression (selective prevention).

Cognitive-behavioural early intervention/prevention programs are short-term, skills-based programs that aim to educate children about the relationship between thoughts, feelings and behaviour and teach them strategies for helping them cope with stress. Typical behavioural components include relaxation exercises to reduce muscle tension and problem-solving skills to assist children to manage difficulties and to help promote their self-efficacy. There is also an emphasis on encouraging children to select and engage in pleasurable activities to enhance mood and combat the tendency towards social withdrawal and inertia that is often associated with depression. The cognitive component focuses on educating children about the link between thoughts and feelings, distinguishing between helpful and unhelpful thoughts and teaching them to recognise and challenge negative thinking and promote more helpful thinking patterns.

The Penn Prevention Program [PPP] (Jaycox et al. 1994, Gillham et al. 1995) has demonstrated significant prevention effects with the implementation of a 12 session cognitive-behavioural program after school with 10-12 year olds reporting elevated symptoms of depression. Doctoral students in clinical psychology implemented the programs. The prevention group reported significantly fewer symptoms of depression at

post-intervention, and over the next 2 years and levels of moderate and severe symptoms halved in intervention group compared to the control group. No significant differences in depression between the groups remained by end of the third year but dropout had increased to 43%, with only small numbers of students remaining in the study (Gillham and Reivich 1999). The prevention group did demonstrate a sustained improvement in negative explanatory style. This is known to be linked to depressive symptoms in children (Nolen-Hoeksema et al. 1992).

A 12 session adaptation for low income minority students of the same age, the Penn Resiliency Program (Cardemil et al. 2002) delivered during school hours by masters-level graduate students, has been shown to significantly reduce symptoms of depression up to 6 months following intervention for Latino, but not African American children, when compared to a control group. The controlled trial of PPP in rural Australia delivered in school with 11-13 year olds by school psychologists and nurses with bachelor-level behavioural science degrees (Roberts et al. 2003) showed a significant reduction in reported anxiety symptoms at post-intervention and 6 month-follow-up but no significant differences between intervention and control groups on reported depressive symptoms at post-intervention or 6 month follow-up, which occurred after transition to high school. As the authors suggest, long-term follow-up of these students may identify if the reduction in anxiety translates into a reduction in depressive symptoms at a later stage, given the evidence that untreated anxiety in childhood can develop into later depression (Cole et al. 1998). Factors affecting the transferability of prevention programs across cultures is also an important consideration.

Clarke and colleagues (1995) targeted a group of 150 high school students with symptoms of depression who did not yet meet diagnostic criteria for major depression or dysthymia at clinical interview. Adolescents provided with a 15-session cognitive therapy group program were found to have an incidence of major depression which was half that of the control group at 12-month follow-up. Clarke et al. (2001) implemented the same program as a selective intervention with the 13-18 year old adolescents of parents with a history of depression. Children whose parents are depressed are at a greater risk of developing depression themselves (Beardslee et al. 1999). After a median follow-up of 15 months, the rate of depression in the intervention group was one third that of the usual care control group. Therapists with masters-level degrees provided the intervention programs.

In a study of first year university students at-risk of depression, with at-risk defined as a pessimistic explanatory style, Seligman et al. (1999) randomly assigned students to an 8-session cognitive-behavioural group program or into an assessment only control group. Participants were followed for a period of 3 years. Trained cognitive therapists delivered the group program. The intervention group had significantly fewer episodes of generalised anxiety disorder than the control group and showed a trend toward fewer major depressive episodes. The intervention group had significantly fewer moderate depressive episodes but no fewer severe depressive episodes. Further the intervention

group had significantly fewer self-reported symptoms of depression and anxiety than the control group, and significantly greater improvements in the at-risk criterion, explanatory style, compared to the control group. Taken together the preceding research provides an indication that there is some benefit in cognitive-behavioural group prevention/early intervention programs for depression in children and young people.

Early intervention still contains the problem of the high number of false positives, where individuals are identified as being at risk, but do not go on to develop a diagnosable disorder (Spence 1996). This process might produce harmful outcomes such as 'labelling' of young children, with consequent stigmatisation and attendant anxiety for child and family. Another problem with programs that target particular students is that not all young people who require the intervention receive parental consent to participate, with rates varying from 13-19% (Gillham et al. 1995) to 51% (Roberts et al. 2003). It is significant to note that consent rates are typically higher for programs offered during, rather than after, school.

These studies suggest that prevention and early intervention programs using cognitive-behavioural principles show some benefit in the reduction of depressive and related symptoms in the short and longer-term, particularly when delivered in a small group format by psychologists or similar personnel.

Check it Out! A case study of a way forward for prevention science

This case study presents learnings about prevention of depression in young people from the implementation of an indicated prevention program. Schools have been identified as the most efficient and systematic means available to promote the psychological, social and physical health of school-aged children (NSW Health Department 1999). Assessing children at school to identify those showing early signs of mental health problems and providing school-based early intervention programs to these children offers a promising approach which helps to overcome the difficulties associated with identification of children at risk, and with physical access to services. Conducting early intervention work within schools also offers the opportunity to increase awareness amongst staff and students of mental health issues, and to educate staff about mental health problems and pathways to community-based services.

The geographic area the program was trialled in has higher levels of socioeconomic disadvantage than other areas of New South Wales (NSW), Australia. This is reflected in lower education levels, higher levels of unemployment, a large number of single parent families, and a population with a high reliance on the public sector for service provision (South Western Sydney Area Health Service 1998). These factors are known to be potential risk factors influencing the development of mental health problems, particularly in children (CDHAC 2000e). The area has one of the highest birth rates in NSW, with children under 15 years old comprising 25 per cent of the population (ABS 2001). The population of the area is highly culturally diverse, with almost 45 per cent of people being born outside of

Australia, and 49 per cent of people speaking a language other than or in addition to English at home (ABS 2001).

The Check it Out! Program (Kasunic et al. 2005) was developed for primary school students prior to transition to high school, who were showing symptoms of depression and anxiety at screening. In the pilot evaluation, forty children were provided with an eight-session cognitive-behavioural group program and then assessed following transition to high school, for levels of symptomatology. The program was based on Adolescents Coping with Emotions (ACE) a validated and well accepted early intervention program for emotional problems in adolescents (Kowalenko et al. 2002). The program was implemented with three cohorts of students at 6 schools during 2001, 2002, and 2003. A total of 40 children completed the program (17 boys and 23 girls, aged 10 or 11 years old) (Kasunic et al. 2005). The first two cohorts did not demonstrate a significant reduction in symptoms of depression and anxiety until 18-24 months after the intervention, which corresponded to the time at which all of the students had made the transition to high school. This pattern of results replicates the findings for the Penn Prevention Program (Gillham et al. 1995). Cohort 3 demonstrated a significant reduction in symptoms of both depression and anxiety at post-intervention, which was maintained at 6-month follow-up after transition to high school. This may be related to the amendments made to the program implementation for Cohort 3 which are discussed below.

In the absence of a control group it is not possible to state conclusively that this significant decline in depressive and anxiety symptoms is attributable to the intervention. Furthermore, statistically significant change does not inform us about clinically meaningful change for individuals within the group. Calculating the Reliable Change Index (Jacobson and Truax 1991) helps to provide insight into meaningful symptomatic change in individuals. Of the 19 students who initially scored in the clinical range on symptoms of depression and anxiety, only three continued to score in the clinical range for depression and only one scored in the clinical range for anxiety at the final follow-up. Significantly, none of the students who completed the intervention moved from the non-clinical range at the initial assessment to the clinical range during the course of the study. Given the trajectory of the development of depression, it would be expected that in the absence of any effect of the intervention, many of these at-risk children would have shown an exacerbation of symptoms over the period.

Although Check it Out! lacks a controlled design and is based on a small number of participants, it has been included as a case study to illustrate a number of important factors to consider in the implementation of prevention programs in schools.

Learnings from the project

The focus in prevention science on internal validity rather than the utility and acceptability of the intervention for its intended context may partially explain why many prevention programs are not sustained be-

yond their initial funding period (Shinn 2003). To be adopted, prevention programs need to be developed in partnership with those organisations for whom they are designed and who will be responsible for their ongoing implementation (Ialongo 2002). This complementary attention to changes in policy, referral pathways and school structures embeds the preventive intervention within a whole school mental health promotion framework. Further, prevention programs (see review by Greenberg et al. 2001), that focus individually on the child are not as effective as those that simultaneously focus on the child, the school and the family.

Programs need to be developed and implemented in partnership

Collaboration with education staff at school, district and state levels has been a key element of the development and implementation of Check it Out! As a project based in a local health service, rather than a university research context, Check it Out! originated in a climate of increasing local collaboration between health and education sectors. This provided opportunities to consult about and promote the initiative through key meetings with the school district superintendent, the Principal's Association, health-education inter-agency committees and district level school counsellor meetings. Senior education staff provided consultation and advice regarding the methodology, ethical issues related to consent, and facilitated gaining the commitment of key personnel such as school counsellors. Local district staff reviewed the screening battery to determine the acceptability of screening measures and conducted a district wide survey to determine the most commonly spoken languages to assist in the translation of consent materials.

Recruitment of schools occurred via the local principal's association, an important strategy given the vital role of the support of principals to implementing successful changes in schools (Stoll 1999). Once schools were involved, ongoing development meetings between the project coordinator, teaching and executive staff and the school counsellor occurred. The 8-session program was designed so it could easily be accommodated into the school term, and the content was designed to be consistent with the health curriculum for that age group.

In the trial evaluation, the Check it Out! program was implemented by a clinical psychologist/psychologist from the health service and the school's counsellor (a trained psychologist). This was found to improve collaboration between the agencies as evidenced by increased referrals from the school to the health service, the provision of clinical consultation regarding students and the co-facilitation of other group programs. Further the project provided training and experience for school counsellors in the implementation of cognitive-behavioural group programs and improved follow-up care for the students in the program.

The development of these local relationships has contributed to the sustained implementation of the Check it Out! program by schools in the local region. The local area health service continues to provide Check it Out! facilitator training, whole-school training, con-

sultation and program materials to schools seeking to implement the program. The amendments to the context of the program delivery and building awareness and support with school staff, may have contributed to the reduction of depressive symptoms for Cohort 3.

The program has also been modified for use with children of parents with a mental health disorder in recreational camp programs in two health service regions in NSW and has been adapted by a number of schools for use as a universal program.

Whole-school approach

Although Check it Out! began with a focus limited to the young people receiving the program and assessing the impact on depressive and anxious symptoms, it became apparent during the initial pilot of the program that there were considerable benefits to broadening the intervention to include the whole-staff of the school. Staff at the schools who participated in Check it Out!, received in-school training on the identification, management and referral of internalising problems. The training was designed to provide information about anxiety and depression in young people, enhance the ability of teachers to identify at-risk children and support them in the classroom setting. It also sought to clarify the appropriate referral pathways within the school and to outside agencies, and provide guidance in how to talk to young people and their parents about these concerns. The training also oriented staff to the concepts of Check it Out!, so that these concepts could be reinforced outside the weekly group sessions.

The majority of participants who received training, reported an increased confidence in recognition and management of internalising problems; and displayed a significant increase in mental health literacy, as assessed by pre-and post-training assessment. Anecdotal reports from the school counsellors based at these schools indicated that there was an increase in the appropriate referral of young people with early signs of internalising across all year levels, not just those targeted for the group intervention program, following the whole-staff training.

In the ongoing implementation of Check it Out!, whole-staff training is recommended as a universal prevention strategy to raise awareness of mental health issues, and identify and refer students with these concerns. It can be used to identify students for the indicated program, overcoming the problems associated with screening such as parental consent, lack of time and funds. It also establishes a supportive context for the program implementation including adequate time, resources and space.

This approach of embedding selected, indicated and early intervention programs within a wider mental health promotion approach in schools (MindMatters+) is being trialled and evaluated across Australia as part of the larger MindMatters activities. MindMatters is a suite of Australian government funded mental health promotion resources for secondary schools (<http://cms.curriculum.edu.au/mindmatters>) in national dissemination phase in all states and territories. By late 2005, 2346 schools with secondary enrol-

ments have been represented in the 56,623 participants representing 84% of all schools in Australia with secondary enrolments. Evaluation of the Australia wide professional development has demonstrated that: staff are equipped to plan whole school change for mental health and teach young people about mental health; and that engaging with the topics was having a positive effect for staff on a personal level. Early evaluation findings indicate that prevention programs conducted in a supportive mental health promotion context have better outcomes.

Parental involvement

The implementation protocol for Check it Out! with Cohort 3 was amended to include a parent information session. Parents were informed about the signs of anxiety and depression in children, why their children were invited to attend the program, and oriented to the concepts of Check it Out!, so that these concepts could be reinforced at home. To assist in this process, parents were provided with the "Check it Out! for Parents" booklets with the content of each session. They also had the opportunity share their concerns about their child, and listen and respond to other parents' concerns. The session also provided more information to the group facilitators about the students in terms of their home environment, psychosocial stressors, history of difficulties and any previous counselling attended. A post-intervention parent session also occurred to discuss their child's progress, additional service requirements and possible referrals. It is likely that the addition of the parent session for this cohort may have contributed to the improvement in depression and anxiety scores at post-intervention and is recommended as a key component to schools implementing Check it Out!

Summary

Involvement of both school personnel and families in prevention programs can assist in the early recognition and management of depression and encourage help-seeking. Programs need be developed and implemented in partnership with the agencies who are will be responsible for their ongoing delivery if they are to be sustained in the long-term. It is important to develop the capacity of staff working directly with young people eg, teachers and school counsellors for school-based prevention efforts to be effective.

Management and service models

The provision of services for those identified with significant levels of symptoms of depression and/or anxiety varies across countries due to different policy and resource provisions. For children in Australia, only a minority of children with clinical levels of symptoms receive professional services (Al-Yaman et al. 2002), with estimates of the percentage of children requiring treatment who actually receive treatment ranging from two per cent (Zubrick et al. 1995) to 25 per cent (Sawyer et al. 2000). Children who do receive treatment are

much more likely to do so from a doctor in general practice, paediatrician or school-based counsellor than specialist mental health services (Sawyer et al. 2000), and these professionals may have only limited training and experience in the assessment and management of serious mental health problems.

These findings show that despite the prevalence of serious mental health problems in Australian children, only a minority of children receive specialised mental health services. Mental health services across Australia report high caseloads and long waiting lists, yet most of the clients of these services have sub-clinical levels of problems (Sawyer et al. 2000). Children who most need mental health services are not necessarily able to access them. This may be in part an issue of physical access, with fewer services being available to children in rural and remote areas where the prevalence of mental health problems is high. Also important is the fact that children typically rely on adults (primarily parents) to access and attend services. Socio-economic and environmental factors (such as low income, high levels of family stress, unstable family environments) that place children at increased risk for experiencing mental health problems may also contribute to their difficulties in obtaining access to required services.

Further, in the absence of widespread community mental health education, parents, teachers and other key adult caregivers may not easily identify the symptoms of depression and anxiety in children. Symptoms of depression are typically less overt and have less impact on others than those of behavioural disorders. Further, some symptoms such as irritability, sadness or lability of mood are considered to be a normal feature of childhood and adolescence and may not be recognised as a sign of a potential mental health problem.

Innovative practice

Although there is some evidence of effective preventative interventions, there are still issues regarding access for young people. Help seeking barriers for young people include reluctance to talking to someone especially adults such as teachers or parents about their problems and concerns and dissatisfaction with the type and format of information available to them (Harden et al. 2001). The Internet provides an opportunity to deliver both mental health information and interventions to young people in an anonymous way which may overcome some of the barriers to help-seeking, such as, lack of awareness, physical access and stigma associated with help-seeking. Approximately 82% of young people aged 14 to 17 years of age reported using the Internet in 2003 (National Office for the Information Economy, 2003) accessed from home, school and public access points..

A brief school based intervention (Nicholas et al. 2004) to encourage adolescents to seek help via the Reach Out! (<http://www.reachout.com.au>) website, which provides information to assist young people in managing a range of difficulties including mental health problems, found that almost half the students had been to website following the presentation and that approxi-

mately two-thirds reported that they would use the website to seek assistance if they were having difficulties. Two Australian internet interventions, BluePages (<http://bluepages.anu.edu.au>), a psychoeducation website providing information about depression and MoodGYM (<http://moodgym.anu.edu.au>) have been shown to be more effective in reducing symptoms of depression than a control intervention using an attention placebo in a community sample (Christensen et al. 2004). The Internet has also been used to screen individuals for depression in the United States and provide advice to those whose scores indicated a high probability of depression about seeking treatment (Houston et al. 2001). This screening program was found to be more effective in identifying young adults with depression aged 18-30 than previous public screenings.

The use of the internet for email contact and web counselling is also proving popular at Kid's Help Line, a National Australian Telephone and Online counselling service for 5-18 year olds <<http://www.kidshelp.com.au>>. The online service is a recent addition in 2000 which continues to expand by 40% each year (Kids Help Line 2005). Online counselling and email exceeded telephone counselling in 2004 as the medium of choice for mental health issues (Kids Help Line 2005). Innovative ways such as the use of emoticons and colour to convey moods and feelings, are being devised to maximise effective communication. Taken together, these findings suggest that the Internet may provide some promise in the prevention of depression, particularly in the areas of screening, access to information and help-seeking.

Conclusion

The prevention of depression in children and young people requires complex, multi-level strategies. As the case study of Check it Out! demonstrates positive outcomes can be enhanced where school based interventions are part of collaborative partnerships with school personnel. Furthermore developing the whole school context to be supportive of mental health promotion strengthens more targeted preventive interventions. Additionally the increasing use of technology by young people signals the potential value of this new medium for increasing the mental health of young people and preventing depression.

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