An Eating Disorders Resource for School - Literature Review

The incidence of eating disorders is increasing in Western countries (Cuzzolaro, 1993) and is considered a major public health concern (Santonastaso, Zanetti, Ferrara, Olovotto, Magnavita & Favaro, 1999; Gresko & Rosenvinge, 1998). In the *National Action Plan for Promotion, Prevention and Early Intervention for Mental Health* (Commonwealth Department of Health and Aged Care, 2000), a reduction in eating disorders is identified as a priority. An evaluation of prevalence research indicates that the incidence of anorexia and bulimia nervosa in the female adolescent and young adult population is between 0.27 to 5.3 percent (Cuzzolaro, 1993). However, there are a greater number of adolescents who experience subclinical symptoms and in some countries this is believed to be epidemic in proportions (Levine & Piran, 1999). Subclinical symptoms include strict dieting, occasional binging and purging, excessive exercise and body image concerns (Graber, Archibald & Brooks-Gunn, 1999) and exist in approximately 5-10% of adolescent females (Button, Loan, Davis & Sonuga-Barke, 1997; Neumark-Sztainer, Story, Falkner, Beuhring & Resnick, 1999).

Eating problems and body dissatisfaction appear to be even more prevalent in the adolescent population. These issues are of particular importance as longitudinal research indicates that factors such as dieting (Patton, Selzer, Coffey, Carlin & Wolfe, 1999) and weight concerns are associated with the later onset of eating disorders (Killen, Taylor, Hayward, Wilson, Haydel, Hammer, Simmonds, Robinson, Litt, Varady & Kraemer, 1994). In an Australian study examining weight loss and bulimic behaviours andbody image concerns among adolescents, almost 50% of females and 30% of males reported using extreme weight loss measures at times (Wertheim, Paxton, Gibbons and Szmukler, 1993). Another Australian study reported that over thirty per cent of adolescent females regularly overate to the point of discomfort or nausea and over 25 percent felt unable to control the urge to eat (Huon, 1994).

Interest in the prevention of eating disorders emerged in the 1970’s (Huon, Braganza, Brown, Ritchie & Roncolato, 1998). From a health promotion perspective, prevention is ideally informed by theories that provide a framework for understanding the risk factors associated with a health issue (Coie, Watt, West, Hawkins, Asarnow, Markman, Ramey, Shure & Long, 1993; Shisslak, Crago, Estes, McKnight, Parnaby,

Sharpe, Bryson, Killen & Taylor, 1998). Consequently, theory development and research have focussed on defining risk factors for eating disorders.

Different disciplines offer alternative explanations of the causes and maintenance of eating disorders (Report on eating disorders project, 1993). Psychological theories emphasise psychopathology and focus on individual or personality characteristics such as perfectionism (Smolak, Levine & Schermer, 1998; Streigel-Moore & Steiner-Adair, 1998, p12-book), body dissatisfaction (Smolak et al, 1998; Streigel-Moore et al, 1998; Killen et al, 1994; Attie & Brooks-Gunn, 1989), dieting, (Patton, Selzer, Coffey, Carlin & Wolfe, 1999; Smolak, Levine & Schermer, 1998), desire to be thinner (Wertheim, Paxton, Maude, Szmukler, Gibbons & Hiller, 1992) and self esteem (O'Dea & Abraham, 2000; Smolak et al 1998; Button, Loan, Davis & Sonuga-Barke, 1997; Baranowski & Hetherington, 2001).

Familial or psychosocial factors have also received considerable attention. Research indicates that people who experience sexual or physical abuse are at an increased risk of experiencing eating disorders (Neumark-Sztainer, Story, Hannan, Beuhring & Resnick, 2000). Family factors such as perceived importance of family life, and family values in relation to physical appearance and achievement, (Ogden & Thomas, 1999), perception of family communication and support (Neumark-Sztainer et al, 2000; Attie & Brooks-Gunn, 1989) and perceived emotional bonding with family (Wertheim et al, 1992) have also been associated with eating disorders.

Sociocultural theories focus on external social and cultural factors that may contribute to the development of eating disorders. They have attracted considerable attention, particularly with their ability to explain the increased incidence of eating disorders in recent years (Nasser & Katzman, 1999). The emergence of eating disorders are seen in context of the wider cultural values such as emphasis on appearance and thinness (Nagel & Jones, 1992; Streigel-Moore & Steiner-Adair, 1998; Smolak, Levine & Schermer, 1998 – book); media images of the thin ideal (Wertheim, Paxton, Schutz & Muir, 1997), weight-related teasing (Neumark-Sztainer, Kalkner, Story, Perry, Hannan & Mulert, 2002) social class (Ogden & Thomas, 1999; McClelland & Crisp, 2001) and potentially high risk environments such as ballet schools (Piran, 1999a) and training institutes for elite athletes (Powers & Johnson, 1999).

Feminist theory has expanded on sociocultural theories, focussing on the distribution of power within the wider cultural system. Throughout history the incidence of eating disorders has increased when women have experienced an increase in power or freedom (Nasser & Katzman, 1999; Spender, 1998). For example, medical literature during the 1920's describes an epidemic of women starving themselves, this post World War 1 was characterised by an increase in women's power such as gaining the right to vote, to enrol in university and to enter the work force (Spender, 1998).

Although theoretical models and research differ in their emphasis on particular risk factors, there is general support for the notion that the causes of eating disorders are multi-factorial (Streigel-Moore & Steiner-Adair, 1998; Huon, Braganza, Brown, Ritchie & Roncolato, 1998; Smolak, Levine & Schermer, 1998). However, the research and literature in this area highlight some of the conceptual, theoretical and practical issues facing researchers, health promoters and clinicians.

Several factors make it difficult to determine a set of identified risk factors for eating disorders. Firstly, factors leading to the development of an eating disorder differ from individual to individual making it impossible to identify one causal pathway (Huon et al 1998, 456; Streigel-Moore & Steiner-Adair, 1998). Secondly, eating disorders do not have a clearly defined onset or offset point. Research indicates that eating disorders are best conceptualised as a continuum including preoccupation with food/weight, dieting, restrained eating, unhealthy weight loss practices and eating disorders (Huon et al, 1998; Smolak, et al 1998; Wertheim, Paxton, Maude, Szmukler, Gibbons & Hiller, 1992).

Conceptualising eating disorders as a continuum presents a difficultly in distinguishing a correlate from a risk factor; for example, a factor may be a result of, rather than a cause of an eating disorder (Compas et al, 1995; Patton, Selzer, Coffey, Carlin & Wolfe, 1999; Smolak et al, 1998). Similarly, distinguishing between what may be early warning signs of an eating disorder and what may be a normal adolescent developmental issue is difficult (Santonastaso et al, 1999). These issues complicate prevention efforts (Huon, Braganza, Brown, Ritchie & Roncolato, 1998; Smolak et al, 1998).

Prevention has been separated into three levels; primary, secondary and tertiary (Caplan, 1964 cited in Austin, 2000). In relation to eating disorders, primary prevention aims to reduce the incidence by targeting risk factors with people who do not show any symptoms of the disorders (Striegal-Moore et al, 1998). Secondary prevention targets people who are either at greater risk or show early signs of an eating disorder. Tertiary prevention or intervention is concerned with improving the outcome for individuals who have developed an eating disorder.

Primary and secondary prevention programs therefore rely on identifying a set of variable risk factors (Santonastaso et al, 1999; Streigel-Moore et al, 1998). Taylor & Altman (1997) argue that the limited success of primary prevention to date may be due to the lack of identified risk factors. As a result of some of the challenges in defining risk factors, some researchers have argued that primary prevention may not be an attainable goal in the area of eating disorders (Carter, Stewart, Dunn & Fairburn, 1997). After minimal or short-lived effects following a school-based prevention, Stewart, Carter, Drinkwater, Hainsworth & Fairburn (2001) suggest that targeting students with early symtomology (or secondary prevention) might yield more effective results. However, in a longitudinal preventative intervention study with adolescent females, Santonastaso et al (1999), found that the intervention appeared to reduce both body dissatisfaction and the risk of bulimic tendencies in low-risk individuals, while it appeared to have no effect on high-risk individuals. This research indicates that primary prevention may be obtainable. Santonastaso et al (1999) concluded that it may be useful to address these groups separately and design different intervention/prevention strategies for groups with different levels of risk.

There is also some research to support the implementation of primary, secondary and even tertiary strategies concurrently. An Australian study found a decrease in body dissatisfaction in both high and low risk individuals following a school-based intervention program based on self esteem, this effect was maintained at a 12 month follow up (O'Dea & Abraham, 2002). After successfully implementing primary, secondary and tertiary strategies in a ballet school, Piran (1998) concluded that the levels of intervention complemented each other.

Despite the difficulties in identifying causal factors for eating disorders, there is considerable consensus about some factors. Longitudinal studies provide useful information about both the causes and the course of illness (Coie et al, 1993) and help to separate potential correlates from causes. A longitudinal study in an adolescent population found that dieting and psychological morbidity were the greatest predictors of the development of an eating disorder, with females who dieted severely being eighteen times more likely to develop an eating disorder (Patton, et al 1999). Other researchers have supported this finding. In a review of current approaches to the prevention of eating disorders, Huon et al (1998) concluded that dieting is the most common precursor to eating disorders, and prevention efforts may be best aimed at reducing the incidence of dieting rather than preventing eating disorders per se.

There is some consensus about the importance of sociocultutral factors in the development and/or maintenance of eating disorders. Neumark-Sztainer (1996) argues that both the increasing incidence and gender differences in eating disorders indicate the significance of these factors. Additionally, some researchers argue that we have a well-developed understanding of the sociocultural factors related to eating disorders and this provides a useful place to start when designing prevention programs (Austin, 2000; Gresko & Rosenvinge, 1998).

Prevention so far

Although research in the area of eating disorders prevention is in its initial stages, some prevention and intervention programs have been implemented and evaluated. Reviews of prevention programs to date indicate that these programs have had limited success in either gaining or sustaining results (Austin, 2000; Taylor & Altman, 1997; Santonastaso et al, 1999; Streigel-Moore & Steiner-Adair, 1998, p5book). The literature in this area highlights some of the conceptual, theoretical and practical issues facing researchers, health promoters and clinicians.

Although some programs have been successful in obtaining promising results, these are usually not sustained. In a long-term, controlled study focusing on weight regulation, coping skills and counteracting sociocultural influences, subjects reported an increase in knowledge, however, this was not accompanied by a decrease in weight

concern or disordered eating at two year follow up (Killen, Taylor, Hammer, Litt, Wilson, Rich, Hayward, Simmonds, Kraemer & Varady, 1993).

In explaining these initially promising results, Pearson, Goldklang & Striegel-Moore, (2002), argue that the effectiveness of prevention efforts may increase if they are more intensive and long-term. Additionally, some theorists argue that prevention efforts are hindered by the impossibility of altering wider sociocultural factors associated with eating disorders (Huon, Braganza, Brown, Ritchie & Roncolato, 1998).

Another explanation for the limited success of these programs may be in part due to their narrow focus. Although some programs have targeted sociocultural factors, the majority have focussed on individual factors such an increasing knowledge, facilitating attitudinal and/or behavioural change or increasing self esteem (Streigel-Moore & Steiner-Adair, 1998, Austin, 2000; Graber, Archibald & Brooks-Gunn, 1999; Paxton, 2002).

In addition to these issues with prevention programs, several researchers have raised concerns about the potential of prevention programs to be harmful. In a school-based eating disorder prevention program, Carter et al (1997) found that an increase in knowledge and a decrease in target behaviour was not sustained at six-month follow-up. Further, after recording an increase in target behaviour (dieting restraint) at six month follow up, the researchers raised the concern that prevention efforts may be counter-productive or even damaging (Carter et al, 1997).

In reviewing this research, Paxton (2002) argues that as there was no control group it is not clear if this observed increase was a result of the intervention itself, or an expected increase in eating concerns consistent with this age group. The majority of prevention and intervention programs have reported some short-lived decreases in target behaviour. Very few have reported negative effects, and therefore there is no consistent evidence to indicate that interventions may be damaging (Paxton, 2002).

Health promotion and illness prevention

These findings highlight some of the difficulties in health promotion and prevention and possible strategies to improve effectiveness of eating disorder prevention programs have been considered. Several authors have argued for a more collaborative approach between theory, research and clinical treatment (Streigel-Moore & Steiner-Adair, 1998; Austin, 2000). Clinical practice (with a focus on intervening at the individual rather than the environmental level) has dominated prevention research (Austin, 2000; Irving, 1999). Despite general acceptance of a multi-factorial model of eating disorders, this typically clinical focus has created difficulties in developing strategies to both alter and measure sociocultural changes (Irving, 1999).

A more collaborative approach between theory, research and clinical treatment has several benefits. Primary, secondary and tertiary prevention efforts can inform each other (Streigel-Moore & Steiner-Adair, 1998). For example, research targeting risk factors has the potential to distinguish between a correlate and a cause. If a targeted factor reduces disordered eating, it may be seen as a cause, if it is unsuccessful in reducing symptoms, it may be seen as a correlate (Smolak, Levine & Schermer, 1998). This information can be used to guide both clinical practice and theory development.

Evaluation methods are also important in measuring the impact of prevention programs. Measuring outcomes in primary prevention have also been influenced by this clinical bias typically focussing on reducing symptoms in the individual. Given the difficulty of reducing the multiple risk factors for eating disorders, Streigel-Moore & Steiner-Adair (1998) argue that it is useful to measure less ambitious parameters such as the willingness to seek treatment. Austin (2000) argues that programs targeting sociocultural factors also need to measure changes in the individual's environment.

In examining ways to improve prevention, it is useful to consider evaluations of other related health promotion initiatives. Public health campaigns addressing other negative behaviours provide valuable information about illness prevention (Irving, 1999). As theories predicting causal factors for eating disorders have informed prevention efforts, models of adolescent development have also informed research,

illness prevention and health promotion. However, despite this increased interest in adolescent health, there has been a decrease in adolescent well-being and an increase in health problems (Compas, Hinden & Gerhardt, 1995) such as substance abuse, depression, suicide, homelessness, school exclusion, violence and sexual activity (Bond, Thomas, Toumbourou, Patton & Catalano, 2000).

Illness prevention and health promotion in the area of general adolescent health reinforces the importance of integrated theory, research and practice. In explaining these disappointing findings, Jessor (1993), argues that earlier models of adolescent development, largely based in behavioural psychology were limited and subsequently lead to gaps in research and theory development. Recent models of adolescent development incorporating findings from other disciplines, such as sociology and anthropology, recognise that there are many influencing factors in the psychological development of adolescents including biological, individual, environmental and social factors (Compas et al, 1995, Jessor, 1993). Jessor (1993) argues that this new multi-disciplinary approach is more reflective of the complexity and diversity of adolescent development and experience and offers a useful conceptual framework to guide research and prevention efforts.

A review of substance abuse prevention illustrates this progression in theory development. Initial prevention efforts focussed on providing information about the legal, moral and health issues associated with drug use and have yielded disappointing results (Weinstein, 1999; Botvin & Griffin, 2002). Information dissemination as a main prevention strategy is ineffective (Gresko & Rosenvinge, 1998). Similarly, prevention efforts aimed at changing the individual while ignoring the wider social environment that young people live in have also been unsuccessful in reducing drug use (Weinstein, 1999; Pentz, Dwyer, MacKinnon, Flay, Hansen, Wang & Johnson, 1989; Botvin & Griffin, 2002).

Weinstein (2000) argues that multi-dimensional theories of behaviour, such as Jessor's theory of adolescent risk behaviour, provide a useful framework to guide future prevention efforts. The Life Skills Training (LST) Program is an adolescent substance abuse prevention program targeting a range of risk factors associated with substance abuse (Botvin & Griffin, 2002). The program includes training in the areas

of social resistance skills, competence enhancement skills (such as decision-making, coping and interpersonal skills) and an information component about drug use.

A randomised, controlled prevention trial using the LST Program showed a significant reduction in the use cigarettes, marijuana and illicit drugs in an adolescent population both initially and at a three-year follow-up (Botvin & Griffin, 2002). Substance abuse prevention strategies that address multiple influences such as individual and environmental factors and address risk and protective factors have been most effective (Weinstein, 1999; Pentz, et al 1989).

Risk and Protective factors

Another body of research focussing on risk factors as well as protective factors provides an additional theoretical basis to develop preventative interventions (Coie, Watt, West, Hawkins, Asarnow, Markman, Ramey, Shure & Long, 1993). Interest in the area of resilience grew out of individual differences in responses to adverse situations. Protective factors have been defined as qualities that interact with a risk factor/s mediating a person’s response and leading to improved health outcomes (Rutter, 1985; Compas et al, 1995; Bond et al, 2000). Resilience, or the ability to deal with adverse life situations, (Fuller, 1998), may be conceptualised as a combination of protective factors.

The notion that resilience, or protective factors can be altered or fostered presents enormous opportunities in the area of health promotion. Research indicates that resilience is a complex and changing quality that develops from an interaction between internal factors such as independence and temperament and external factors such as relationships with others, social and environmental influences (Butler, 1997; Brooks, 1994, Werner & Smith, 1992). The risk-focussed approach to prevention and intervention in adolescent health has had positive results (Bond et al, 2000; Weinstein, 1999).

Several studies have attempted to understand the complex nature and development of resilience. In a study investigating adolescent risk and protective factors, parent-family connectedness and perceived school connectedness were found to be key protective factors in an adolescent’s life. These two factors alone were protective

against seven out of eight adolescent health issues. For example, school connectedness correlated with lower levels of emotional distress and suicidal behaviour, and less frequent use of both tobacco and marijuana (Resnick, Bearman, Blum, Bauman, Harris, Jones, Tabor, Beuhring, Sieving, Shew, Ireland, Bearinger & Udry, 1997).

Another longitudinal study with adolescents measured the relationship between risk and protective factors across four domains including community, family, school and peers (Bond et al, 2000). This research found a strong, linear relationship between the number of risk and protective factors and problem behaviour, so that as the number of risk factors increased, so did the number and frequency of risk behaviours. Similarly an increase in the number of protective factors lead to a decrease in the number or frequency of risk behaviours. Based on the findings, four key protective factors were identified; rewards for community involvement, family attachment, opportunities and rewards for school involvement and social skills training (Bond et al, 2000).

A forty-year study investigating the long-term effects of both protective factors and childhood adversity (such as poverty, family disharmony or parental psychopathology) followed 505 newborn babies until the age of 40 (Werner & Smith, 1992). Although two thirds of the children exposed to high risk factors developed serious mental health and/or behavioural problems, one third developed into competent and confident adults. These differences within the high-risk group provide invaluable information about protective factors. Statistical analysis of the data revealed three clusters that acted as protective factors; individual qualities such as robustness and social temperament; trusting relationships with significant parental figures (such as siblings or grandparents) and external support systems that provided opportunities for participation (such as school or religious groups). In summary, the resilient group had the ability to positively interact with their environment enabling them to cope with stress even when exposed to multiple risk factors (Werner & Smith, 1992).

These findings highlight the importance of an extended support system, a feeling of connectedness within both the family and school, and opportunities to participate in a young person's life. These research findings were replicated in a series of focus

groups with Australian adolescents. This group saw peer connectedness, fitting in at school, positive family relationships and a supportive adult outside the family as importance factors contributing to their well being (Fuller, McGraw & Goodyear, 1998, cited in Fuller, 1999). A young person's perception of caring and connectedness are important factors when understanding adolescent health (Resnick et al, 1997)

Research and theory development to date highlight that there are many factors to consider when designing, implementing and evaluating prevention initiatives. Although there are no definitive answers about the best way to prevent eating disorders, research indicates that prevention may be an attainable and realistic goal (Levine & Piran, 1998). Several authors have argued that there is considerable theory and practice to guide efforts (Smolak, Levine & Schermer, 1998; Austin, 2000; Neumark-Sztainer, 1996). For example, theories and research attempting to clarify the development of eating disorders as well risk and protective factor research offer information about useful areas to target in prevention and intervention programs. Similarly, the evolution of substance abuse prevention and other health promotion efforts provide valuable information about effective prevention and health promotion principals and strategies.

Holistic Prevention

Several people working in the field of eating disorders have suggested a collaborative, holistic approach may increase the effectiveness of prevention programs (Neumark-Sztainer, 1996; Austin, 2000; O'Dea & Maloney, 2000; Piran, 1999; Streigel-Moore & Steiner-Adair, 1998; Huon et al, 1998). A holistic approach is multi-layered, encompassing social, environmental and individual factors and facilitates the use of primary, secondary and tertiary strategies. A benefit of this wider approach is its capacity to draw on several theories about the development of eating disorders and address several etiological factors concurrently. This approach has the potential to facilitate some level of consistency between factors, for example, reducing the likelihood of peers or family members giving contrary messages to a prevention program.

Research suggests that individual, family, school, peer and community risk factors are interdependent (Coie et al, 1993; Bond et al, 2000) and it makes sense to address

these simultaneously. In their research of risk and protective factors for a range of adolescent physical, social and mental health issues, Bond et al (2000) found that many health problems shared risk and protective factors and argue that targeting one factor may have positive outcomes for a number of other health concerns. The high rate of co-morbidity across adolescent health provides support for this notion (Compas et al, 1995; Streigel-Moore et al, 1998). Further, a prevention program targeting a range of adolescent health problems may avoid duplication of prevention efforts and improve cost effectiveness (Streigel-Moore & Steiner-Adair, 1998).

It has been suggested that schools provide a suitable setting in which to base prevention programs. The school has the potential to provide protection from harmful health risks (Weare, 2000; Rutter, 1985; Gresko & Rosenvinge, 1998*).* Jessor (1993) and Austin (2000) argue that as the school, family and the neighbourhood are proximal to the adolescent's life, their influence can be direct. This highlights the importance of collaboration in prevention and intervention efforts and the potentially important role of the school. Additionally, as adolescence is a high-risk time for the development of eating disorders, the school is an obvious environment in which to conduct prevention efforts (Santonastaso, 1999).

Neumark-Sztainer (1996) suggests that in order for school-based programs to be more effective, they need to be long-term, intensive and more broadly focussed to include the whole school environment and the wider community. Ideally, Neumark-Sztainer (1996) argues a whole school approach would address several levels including, but not limited to, staff training, a review of available physical education opportunities for all students and opportunities for healthy eating. On a secondary prevention level, developing a support and referral network aimed at adolescents at high-risk. On a community level, a wider approach would involve a collaborative relationship between the school and its local community and health services.

O'Dea & Maloney (2000), suggest ways of incorporating eating disorders prevention into the World Health Organisation's Health Promoting Schools Framework. Similarly to the areas highlighted by Neumark-Sztainer (1996), the framework addresses three areas; school curriculum, teaching and learning; school environment and school-community partnerships. The framework highlights the importance

implementing policies and practices that promote the health of everyone in the school community including school staff, families, community members and students. O'Dea & Maloney (2000) provide an example of this framework applied to eating disorders prevention where dieting prevention is addressed across the curriculum through health education, English and science units.

Piran (1999a & 1999b) has implemented and evaluated an intervention and prevention model in a residential dance school. This model, based on the World Health Organisation's Health Promoting Schools Framework, incorporates feminist principals such as social, cultural and political factors that affect women's experience of themselves. The aims of the collaborative approach are to reduce body weight and shape preoccupation and the incidence of clinical eating disorders. The main strategy used to create change in the school environment is open dialogue with members of the whole school community through regular staff meetings, educational sessions and focus groups. This open dialogue serves many functions from creating shared goals within the school community and facilitating awareness of contributing factors and strategies to address these. Additionally, this regular dialogue facilitates supportive relationships within the school community as well as a shared commitment to each other's welfare.

This program has been found to be effective in combating body shape and weight preoccupation (Piran, 1999a) and decreasing the incidence of new clinical and subclinical eating disorders and body-image disturbance (Piran, 1999b). In an evaluation of the success of this prevention initiative, Irving (1999) suggests that Piran's regular consultation with members of the school community and the subsequent design of interventions specific to this communities needs was imperative. The success of the program has also been attributed to the focus of change at both a systemic level and an individual level through empowering students (Piran, 1999b).

Although the Health Promoting Schools Framework is beginning to be applied to mental health within schools (Weare, 2000), several health promotion efforts have been developed and implemented in other areas of adolescent health. Programs such as *The Gatehouse Project*, *Mind Matters* and the *Comer Process for Change in Education* have highlighted the potential of a whole school health promotion model.

On a local level, *The Gatehouse Project* is an implemented and evaluated comprehensive whole school program aimed at strengthening the school community's capacity to incorporate mental health promotion in its policies and practice (Butler, Bond, Glover & Patton, 2002). Utilising the World Health Organisation's Health Promoting Schools Framework and research in the area of resilience, the Project includes a five step process that supports schools in identifying and addressing mental health concerns specific to their school. The process includes; 1) establishing an adolescent health team 2) reviewing school policies, practices and needs in relation to this area; 3) based on this review, planning to address risk and protective factors; 4) training support for members of the school community to implement the strategies and finally 5) monitoring and evaluation of the strategies (Butler et al, 2002).

The *MindMatters National Mental Health in Schools Program* also based on the Health Promoting Schools Framework, is a national initiative aimed to develop psychosocial wellbeing of young people through schools (Sheehan, Cahill, Rowling, Marshall, Wynn & Holdsworth, 2002). Addressing the different levels of intervention (prevention to intervention), the program encourages schools to create school environment that fosters a sense of belonging, connectedness and self-worth. On a more targeted level, the program offers comprehensive curriculum materials based on effective education principals (such as socratic, experiential teaching), to guide teaching about mental health issues.

Based on the evaluation of the MindMatters pilot, Sheehan et al (2002), have highlighted several issues to consider when implementing a whole-school approach, including, but not limited to, the unique nature of individual schools, the important role of the support of the school executive, the additional demands on teaching staff and the organisational structure of schools.

Finally, the *Comer School Reform Project* is an evaluated model for whole school change designed to support under-resourced schools in the USA (Ben-Avie, 1999). The model aims to enhance student learning and development on six different trajectories; physical, cognitive, psychological, language, social and ethical. The Project places emphasis on the school climate and relationships between people

involved in the student's world, including parents, teachers and community members. Three teams are responsible for implementing different aspects of this approach, the School Planning and Management Team, the Student and Staff Support Team and the Parent Team. These teams work together under three guiding principals, consensus (or agreed goals), collaboration and no-fault (or a sense of shared accountability for student well-being).

In a four-year evaluation of this program in 10 schools (with a further nine schools used as a control group), improvements were found in the areas of student academic performance, school climate and individual well-being (Northwestern University, Institute for Policy Research, 1998). Students in the Comer group reported a more positive school social climate and more academic support from teachers than students in the control group. Additionally, students in the Comer group reported feeling less anger and more control over negative emotions. This was reflected in the reduction of reported delinquent behaviours. On an academic level, over 10,000 students improved in both reading and maths scores during the four-year evaluation (Northwestern University, Institute for Policy Research, 1998). This whole-school approach emphasises the importance of fostering connectedness and positive relationships within the school community and within individuals, and the fundamental value of self-worth in influencing an individual's perception of their competence (Brown & Woodruff, 1999).

Many of the principals highlighted by research and other models of whole-school change have been incorporated into the *Framework for Student Support Services in Victorian Government Schools* (Department of Education, Victoria, 1999). This Framework provides a useful model in which to address the issues of eating disorder prevention and intervention. The Framework addresses four key target areas to enhance the school environment; primary prevention, early intervention, intervention (or secondary prevention) and postvention (or restoring well-being). Drawing on the findings from resiliency research, the Framework emphasises the importance of developing a positive and caring school environment that fosters a sense of belonging as well as the importance of promoting positive relationships between the school, parents and wider community.