Prevention and early intervention for mental health problems in 0–25 year olds: Are there evidence-based models of care?

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ABSTRACT

Approximately 10–20% of children and young people aged 0–25 years have significant mental health problems, with 50% of mental illnesses commencing before the age of 14 and 75% by the age of 24. Mental health disorders account for the highest burden of disease across this age range, lead by anxiety and mood disorders and problematic substance use. Regrettably, there is an inverse relationship between the prevalence of mental disorders in this age group and the use of health services to improve mental health outcomes, with only a fraction of affected individuals receiving appropriate treatment through psychiatric services. There is a pressing need to develop better models of care to ensure greater access to appropriate early intervention services among those with the highest rates and risks for developing mental disorders; in this case, those aged 0–25 years. This paper reviews the development of mental health disorders and the mental health needs of children and young people aged 0–25, and the evidence for collaborative and integrated service systems to ensure adequate treatment provision and continuity of care across this age spectrum.

Keywords: prevention, early intervention, mental health, children, adolescents, young people, integrated models of care, collaboration

INTRODUCTION

Approximately 10–20% of children and young people aged 0–25 years have significant mental health problems, with 50% of mental illnesses commencing before the age of 14 and 75% by the age of 24 (Kessler, Berglund, Demler, Jin, & Walters, 2005). Mental disorders account for the highest burden of disease across this age range, lead by anxiety and mood disorders and problematic substance use (Australian Institute of Health and Welfare [AIHW], 2007; Kessler et al., 2005). Regrettably, there is an inverse relationship between the prevalence of mental disorders in this age group and the use of health services to improve mental health outcomes, with only a fraction of affected individuals receiving appropriate treatment through psychiatric services (Costello, Copeland, Cowell, & Keeler, 2007; Sawyer et al., 2000). The 2007 Australian National Survey of Mental Health and Wellbeing indicated that the gap between the peak prevalence of disorders and service use is greatest in adolescents and young people (Australian Bureau of Statistics, 2007). Despite over 25% of this age group meeting the diagnostic criteria for a disorder in any year, less than 10% access clinical services. Of those that do receive services, the majority fail to receive an evidence-based treatment (Andrews, Sanderson, Corry, & Lapsley, 2000). There is a pressing need to develop better models of care to ensure greater access to appropriate health services among those with the highest rates and risks for developing mental disorders; in this case, those aged 0–25 years. The aims of this paper are to summarise the development of mental disorders and the mental health needs of children and young people aged 0–25, and to review the evidence for collaborative and integrated service systems that promote better continuity of care and treatment provision across this age spectrum.

THE DEVELOPMENT OF MENTAL HEALTH PROBLEMS

A diverse range of protective and risk factors can influence mental health across the 0–25 age span. Healthy prenatal and early childhood development, incorporating stable and responsive attachment relationships, safe and supportive environments, and appropriate nutrition,
lay the foundations for well-being throughout life (McCain & Mustard, 1999). In usual circumstances, a child will experience warm and consistent relationships with their caregiver(s) supporting critical neurological and psychological development and the foundations of good mental health. Brain growth occurs at its most rapid rate in the first 3 years of life with the establishment of neurological pathways needed for affect regulation, learning, memory and cognition. Early development occurs in the context of attachment relationships with a body of evidence pointing to the significance of organised attachment experiences for optimal development (Schore, 2001; Siegel, 2001). Nurturing in the early years has a decisive impact on how children develop, their learning capabilities, their behaviour, their ability to regulate emotions and understand social interaction, and their risks for disease in later life. Children who receive inadequate or disruptive care and stimulation are more likely to subsequently develop learning, behavioural and/or emotional difficulties (McCain & Mustard, 1999). This development encompasses the equally important domains of physical, social and emotional functioning, and language and cognition, which have been associated with better well-being, mental and physical health, vocational competence, and economic participation throughout life (Irwin, Siddiqi, & Hertzman, 2007). However, detrimental early experiences, such as neglect and trauma, can impact adversely on the developmental course and affect brain architecture (National Scientific Council on the Developing Child, 2007). Early relational trauma impacts on the development of core personality functions such as affect recognition and regulation, sense of self and the ability to understand relationships and mental functioning (reflective functioning; Fonagy & Target, 1997). Significantly, these early traumas are associated with ongoing difficulties in personality and interpersonal functioning with major impact on psychosocial functioning (Fonagy & Luyten, 2009; Fonagy & Target, 1997).

The foundations of brain architecture are established through dynamic interactions between genetic influences, environmental conditions and personal experiences. There is burgeoning evidence on the crucial role that environmental factors play in coordinating the pattern and timing of gene expression, which subsequently determines initial brain architecture (Fox, Levitt, & Nelson, 2010). Recent gene-environment interaction studies in humans have focused on outcomes of early stress and early adversity as a function of genotype (e.g., Caspi et al., 2002). For example, a number of research groups have demonstrated a link between a measured genotype and environmental condition for a psychiatric outcome, such that individuals who carried a particular form of a gene were at increased risk for developing antisocial behaviour disorders when subjected to maltreatment (see Taylor & Kim-Cohen, 2007). It has been proposed that there is a molecular mechanism that is involved in the regulation of gene expression and this can mediate vulnerability and resilience in the brain (McCrory, De Brito, & Viding, 2010). One of the mechanisms by which early brain architecture is affected is by over-activation of the stress response system, which occurs when early care giving experiences are burdened with threat and uncertainty.

The infant brain is particularly sensitive to the effects of stress-related hormones such as cortisol, which directly affect nerve growth and processes such as myelination (Green et al., 2010; Shonkoff, 2010). The degree to which traumatic events have enduring harmful effects is determined more by an individual’s response to stress, based on past experiences and the availability of caring adults, than by the stressor itself (Creamer, Burgess, & Pattison, 1992; National Scientific Council on the Developing Child, 2005). A conceptually guided taxonomy based on three categories of the physiological stress experience (positive, tolerable, and toxic) has been proposed to differentiate the growth-promoting normal challenges of life from significant threats to health and development that warrant intervention (Shonkoff, 2010).

Positive stress refers to short-lived mild changes in stress hormone levels or brief increases in heart rate in response to normative events such as adjusting to a new care setting, meeting new people or dealing with frustration. However, these challenges must be experienced in the context of stable and supportive relationships, which
facilitate adaptive responses that restore the stress response to baseline. Tolerable stress is characterised by physiological states that can potentially disrupt brain architecture but the presence of supportive adults can help facilitate adaptive coping and restore the body’s stress responses to baseline. Examples of precipitants include the death or serious illness of a loved one, parental separation, or a natural disaster. Toxic stress refers to strong, frequent, and/or prolonged activation of the body’s stress management system in the absence of stable adult support. This type of stress can disrupt brain architecture, adversely affect other organs and change the stress system so that it has a lower threshold for responsiveness, thereby increasing the risk of stress-related mental and physical illness. Risk factors include recurrent physical and/or emotional abuse, neglect, family violence, and extreme poverty (National Scientific Council on the Developing Child, 2005; Shonkoff, 2010).

**ATTACHMENT PATTERNS AND MENTAL HEALTH**

The findings on the association between early stress experiences and human development reveal that children’s relationships with their primary caregivers are critical in developing and regulating stress hormone production during the early years (National Scientific Council on the Developing Child, 2007). Attachment theory has been influential in highlighting the importance of social relationships in development (Bowlby, 1969). Attachment is considered ‘a basic, in-born, biological adaptive ‘motivational system’ that drives the infant to create a few, selective attachments in his life’ (Siegel, 2001, p. 69). Attachment to a protective caregiver helps infants to regulate their emotions in times of stress and to provide a secure base in which to explore the world.

A conceptualisation of individual differences in the quality of attachment advanced by Ainsworth, Blehar, Waters, and Wall (1978), categorised attachment behaviour into three observable patterns: secure; anxious-avoidant; and anxious-ambivalent. Due to patterns that were difficult to classify in high-risk samples (such as abused or institutionalised infants), a fourth conceptualisation was also added, disorganised-disoriented patterns of attachment (Main & Solomon, 1986). Avoidant, ambivalent and secure infants have varying strategies for seeking the help of the caregiver to alleviate stress. The secure infant explores freely and seeks contact with the caregiver as necessary. The avoidant infant focuses on exploration and maintains closeness to the caregiver, but does not express attachment needs to avoid likely rejection. The ambivalent infant is preoccupied with the availability of an inconsistent caregiver. However the disorganised infant does not respond in a consistent way when seeking a caregiver to alleviate distress (Balbernie, 2002; Guttmann-Steinmetz & Crowell, 2006).

Disorganisation of attachment, representing a failure to develop a coherent attachment pattern, is associated with increased rates of disruptive behaviour disorders in early childhood and stress-related symptomatology such as dissociation into adolescence. This suggests that early experiences can have a profound ongoing influence on later mental health and functioning. Theoretically, this may represent a state of neurodevelopmental vulnerability which predisposes to the range of mental health problems (Cyr, Euser, Bakermans-Kranenburg, & Van Ijzendoorn, 2010; Solomon & George, 1999; Stroufe, 2005; Stroufe, Carlson, Levy, & Egeland, 1999).

Child maltreatment can impact significantly on attachment relations and substantially contribute to child morbidity and mortality, and has long-term impacts on mental health, drug and alcohol misuse, sexual risk behaviour, obesity, and offending behaviour (Gilbert et al., 2009b). Child maltreatment includes any acts of commission or omission by a caregiver that ‘result in harm, potential for harm, or threat of harm to a child’, even if harm is not the intended result (Gilbert et al., 2009b, p. 68) and four types are widely recognised: physical abuse; sexual abuse; psychological/emotional abuse; and neglect (Gilbert et al., 2009a). The burden of mental health problems resulting from child maltreatment is substantial. The maltreatment of children increases the risk of internalising (i.e., anxiety, depression) and externalising (i.e., aggression, acting out) behaviour problems (e.g., Herrenkohl, Herrenkohl, Rupert, Egolf, & Lutz, 1995; Lansford et al., 2002). Evidence consistently suggests that physical and...
illness, sexual abuse are associated with a doubling of the risk of attempted suicide in young people and the risk of attempted suicide increases with the accumulation of multiple adversities (Gilbert et al., 2009b). Furthermore, child maltreatment increases the risk of depression (Fergusson, Boden, & Horwood, 2008), post-traumatic stress disorder (Tolin & Foa, 2006) and alcohol problems (Simpson & Miller, 2002) in adolescence and adulthood. Similarly, early child sexual abuse has been found to be associated with increased rates of psychotic disorders in adolescence, again suggesting that early trauma establishes a state of neurodevelopmental vulnerability (Cutajar et al., 2010).

The incidence of mental health problems is high for those who have experienced other forms of disadvantage (e.g., Witt, Riley, & Coiro, 2003; Zubrick et al., 2005). Adversities experienced in childhood also include interpersonal loss (parental death, parental divorce, and other separations from parents or caregivers), parental maladjustment (mental illness, substance abuse, violence and offending), life-threatening childhood physical illness, and extreme childhood family economic adversity (Green et al., 2010). Numerous studies have documented the significant associations between reported childhood adversities (CAs) and adult mental health problems (e.g., Green et al., 2010; McLaughlan et al., 2010). A large cross-sectional community study of 9282 adults in the United States found that CAs were highly prevalent and intercorrelated, and there was little specificity for particular CAs with particular mental disorders (Green et al., 2010). CAs have also been found to significantly predict the persistence of mental disorders. Adversities associated with family dysfunction were found to be stronger predictors of persistence than other CAs, while the effects of CAs on persistence were larger for mood and substance use disorders than for anxiety disorders (McLaughlan et al., 2010). A World Health Organization World Mental Health Survey examining the prevalence and associations of retrospectively reported CAs in 21 countries (Kessler et al., 2010) found that they accounted for 29.8% of all adult disorders. Parental mental illness, child abuse and neglect were the strongest predictors of disorders.

CONTINUITY OF MENTAL HEALTH PROBLEMS FROM CHILDHOOD TO YOUNG ADULTHOOD

There is a demonstrated continuity of mental health problems from childhood through to adolescence and adulthood (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Fergusson & Horwood, 2001). The various risk and protective factors reviewed above respectively mediate the continuities and discontinuities in psychopathology between childhood and young adulthood (Rutter, Kim-Cohen, & Maughan, 2006). The kindling hypothesis, which postulates that the experience of a mental disorder brings about changes that make recurrence more likely (Rutter et al., 2006), has been particularly influential. The way an individual responds to their psychopathology may also increase or decrease later risks. For example, there is a suggestion that an individual’s conceptualisation of their experience can influence the course of the psychopathology from which they are suffering (Rutter et al., 2006). That there is often a trans-generational phenomenon, for example with parents who have experienced early abuse replicating this with their own children (Newman, Harris, & Allen, 2010), further complicates this association.

WHAT ARE THE MENTAL HEALTH NEEDS OF CHILDREN AND YOUNG PEOPLE?

A growing body of evidence indicates that the opportunities for preventing mental health disorders are greatest by focusing on children and young people (Durlak & Wells, 1997; World Health Organization, 2004). Early intervention strategies can be effective in delaying or preventing the onset of these disorders, with the bulk of evidence to date concerning psychosis (Amminger et al., 2010; Edwards & McGorry, 2002; McGorry et al., 2002; Yung et al., 2003), disorders that have traditionally been associated with the most pessimistic outcomes. This body of research not only demonstrates the effectiveness of early intervention in alleviating clinical symptoms, but ameliorating the
Examples of effective strategies include parenting programs targeting poor parenting practices or family conflict, school-based programs delivering universal interventions designed to prevent anxiety and depression, as well as interventions targeting children who might be at risk for these disorders, and specific individual interventions for those with diagnosed mental health symptoms and disorders (e.g., Dadds, Spence, Holland, Barrett, & Laurens, 1997; Spence, 1996; Tremblay et al., 1992).

The adolescent and young adulthood years (12–25 years) encompass major psychological, social and continuing biological changes in the individual. This developmental period is a time of both opportunity and challenge and is associated with increased socialisation, sexual maturity, increasing independence with separation from the family and development of self-identity. Many mental health issues such as depression, substance misuse and psychosis, have their peak period of incidence in this age group, which highlights a clear imperative for early diagnosis and intervention to prevent progression of primary disorders and development of secondary comorbid disorders, as well as collateral impacts on social and vocational functioning (McGorry, Parker, & Purcell, 2007a). There are also high rates of self-harm in young people and suicide is a leading cause of death in this age group (Patel, Flisher, Hetrick, & McGorry, 2007). The influential global burden of disease report (Murray & Lopez, 1996) estimated the peak age for maximum negative impact of a disabling illness in terms of social and economic outcomes to be 22 years. This is because society has invested heavily in young people to enable them to reach this age intact, and if their potential is not able to be fulfilled due to a mental or physical illness, then this equates to social and economic disaster (McGorry & Purcell, 2009).

Similar to middle childhood, both universal and targeted anxiety and depression prevention programs can be effective, and are likely to be maximally cost-effective at this stage of life given the findings of the global burden of disease study (Murray & Lopez, 1996). For example, meta-analyses have found that prevention interventions for
depression can reduce depressive symptomatology and reduce the number of new cases of depression in children and young people (Cuijpers, van Straten, Smit, Mihalopoulos, & Beekman, 2008; Horowitz & Garber, 2006). It is equally essential that early intervention and treatment strategies focused on individuals with emerging and first episode mental health disorders are available. There has been encouraging evidence for particular interventions for specific disorders, especially in early intervention for psychotic disorders (e.g., Bechdolf et al., 2007; McGorry et al., 2002; Morrison et al., 2004).

**HOW TO ACHIEVE BETTER OUTCOMES ACROSS THE 0–25 YEAR SPECTRUM? IS THERE EVIDENCE FOR STREAMED, INTEGRATED TREATMENT MODELS?**

Given the size of this problem and the diverse psychosocial, environmental and neurobiological variables associated with mental disorders in those aged 0–25 years, an equally comprehensive range of responses is required. This includes far greater investment in public policy initiatives to reduce poverty, bolster the availability of parenting programmes, improve child protective services and respond to the challenges of problematic alcohol consumption in Australian communities to name a few. However, for the remainder of this paper, we concede to being pragmatic by focusing only on reforming treatment services (however difficult that aim alone may be) rather than changing society more broadly.

Successful early intervention for mental health problems require clear pathways to access care and an approach that is suited to individual life stages and situations that takes into account the impact of environmental and social factors on mental health and well-being. Due to the complex and often fluctuating nature of the issues presenting in childhood, adolescence and young adulthood, an integrated, multidisciplinary and streamed system of care is required (e.g., enabling seamless transitions between services regardless of the client’s age). While this itself may appear idealist, given the continuities of mental health problems across this age spectrum, coupled with the well-documented lack of access to care for young people, such an integrated and streamed model is necessary to redress the repeated failures of the existing systems of care.

One such integrated model of care that has demonstrated effectiveness in other areas of medicine, including the management of depression in (older) adults (Katon, Von Korff, Lin, & Simon, 2001), is collaborative or shared care. These terms broadly describe a method of working together and co-operatively to ensure individuals receive the range of services they most need (Bower, Gilbody, Fletcher, & Sutton, 2006; Gilbody, Bower, Fletcher, Richards, & Sutton, 2006). How this is achieved has varied and has included enhanced communication, sharing of clinical care, joint education, joint programs and system planning. It involves a degree of systemic co-operation (e.g., how systems agree to work together) and local co-operation between different groups of clinicians (Craven & Bland, 2006; Holmwood, Groom, & Nicolson, 2001).

The original Cochrane systematic review (SR) that examined models of care that represented organizational change to facilitate greater collaboration between primary health care workers and specialist mental health providers showed the ‘replacement model’ (referral to mental health care worker) was limited in effectiveness. However it highlighted the potential for ‘consultation-liaison’ (which included collaborative care) models to improve prescribing practices and clinical outcomes (Bower & Sibbald, 2000). Since then, more specific definitions around such models of care have arisen and been examined separately. Bower and Gilbody (2005) showed that of four interventions aiming at increased collaboration between primary care and specialist mental health (training, replacement/referral, consultation liaison and collaborative care), collaborative care had the most consistent evidence of clinical effectiveness. A Cochrane SR of 42 studies in which on-site mental health workers (MHW) worked alongside primary care physicians to provide therapy to patients found some evidence that this model resulted in a significant reduction in GP consultations, psychotropic prescribing, and referrals to specialist mental health care (Harkness & Bower, 2009).
IS THERE EVIDENCE FOR THE USE OF INTEGRATED MODELS OF CARE IN MANAGING MENTAL HEALTH PROBLEMS IN CHILDREN AND YOUNG PEOPLE?

Despite the evidence supporting the effectiveness of greater integration and collaboration of care providers in managing mental health disorders in primary care (Bower & Gilbody, 2005), there is a paucity of research for such models in managing mental health problems in the 0–25 age group. We conducted a systematic search of the literature on models of mental health care for children and youth (the search strategy is available upon request to the corresponding author) that involved integrated mental health, primary healthcare and psychosocial services for prevention and early intervention. The search retrieved a total of 779 articles relevant to our age group. We supplemented the search with ‘snowballing’ (Greenhalgh & Peacock, 2005) to enable further examination of the research conducted on models of integrated care that incorporate some degree of collaboration between professionals. A selection of key papers from this search is provided below.

**Randomised controlled trials**

In a randomised controlled trial (RCT) of 13–21 year olds with depression who presented to primary care, those who received 6-month collaborative care intervention ($N = 211$) were compared to those who received usual care ($N = 207$). The intervention included expert leader teams at each site, care managers who supported primary care clinicians in evaluating and managing the patients’ depression, training for care managers in manualised cognitive behavior therapy (CBT) for depression, and patient and clinician choice regarding treatment modality. Education regarding depression evaluation, management, and pharmacological and psychosocial treatment was also included. Those in the intervention arm reported significantly fewer depressive symptoms, higher mental health-related quality of life, and greater satisfaction with mental health care (Asarnow et al., 2005). At 6 month follow-up, the likelihood of severe depression was lower in the intervention group ($N = 170$), relative to usual care ($N = 174$), although this effect was not maintained to statistical significance at 18 months (Asarnow et al., 2009).

In a randomised effectiveness trial for depressed 12–18 year olds, a treatment as usual (TAU) condition (consisting primarily of medication; $N = 75$) was compared to TAU plus brief CBT condition ($N = 77$; Clarke et al., 2005). A collaborative care model was utilised in the treatment condition with psychosocial support and skills training provided by a mental health specialist and medication management provided by a primary care provider, co-located in a primary care clinic. The authors found only weak evidence of the effectiveness of the collaborative care program with a non-significant trend ($p = 0.07$) favouring the treatment condition in reducing depressive symptoms. It was speculated that the weak CBT effect may be due to the small sample size and the reduced use of medication in the collaborative care arm.

**Comparative studies of early childhood interventions**

Integration of early development and parenting services, early education, preschool and school preparation programs in collaboration with child protection services, as well as adult drug and alcohol and mental health services is essential to ensuring early intervention for the most socially disadvantaged and at-risk infants and children (McCain & Mustard, 1999; Raphael, 2000). Evidence for this comes from a prenatal/early infancy program, which utilised nurses to provide home visits to expectant mothers and their families in Elmira, a rural area of New York State (Olds, Henderson, Chamberlin, & Tatelbaum, 1986). Families were randomly assigned to one of four treatment conditions: 1. No services (control group; $N = 90$); 2. Free transport to regular prenatal and well-child visits ($N = 94$); 3. Nurse home visitation during pregnancy ($N = 100$); and 4. Nurse home visitation during child’s first 2 years of life ($N = 116$). In the postnatal program (group 4), nurses provided education about the physical and emotional care of their child as well as supporting mothers in their own life course development including finding employment. Families who were visited by a nurse had fewer verified instances of child abuse.
and neglect in comparison with the control groups (0.29 vs. 0.54); were observed to restrict and punish their children less frequently and provided more appropriate play materials; and their babies were seen in the emergency room less frequently during the first year of life (Olds et al., 1986). Long-term findings have shown that this program can reduce the number of subsequent pregnancies, the use of welfare, child abuse and neglect, and criminal behaviour on the part of low-income, unmarried mothers for up to 15 years after the birth of the first child (Olds et al., 1997). An economic evaluation of the program showed that savings exceeded the costs of the program by a factor of four over the lifetimes of the children (Olds et al., 1999).

The Perry Preschool project included an educational intervention for low-income families and their preschool children. Teachers engaged children in early education that focused on problem solving, choice and decision making, taking responsibility and maintaining structure and daily routines. A home visiting element was included so that parents could reinforce this teaching at home. Compared to controls, there were positive outcomes for those included in the program for up to 27 years, including lower levels of criminal activity, higher earnings and economic status, higher educational attainment, and lower levels of single parenting. An economic cost benefit analysis has demonstrated significant savings (Schweinhart, 2002).

**Descriptive studies with elements of integration and collaboration**

Targeted Child Psychiatric Services (TCPS) is a collaborative care initiative between primary care and psychiatry services for children and adolescents in Massachusetts. TCPS can service a large number of primary care practices (PCPs) and provides collaborative help with attention deficit hyperactivity disorder, depression, anxiety and psychopharmacology (Conner et al., 2006). The TCPS program was a demonstration program upon which a statewide service was introduced called the Massachusetts Child Psychiatry Access Project. A report of this initiative states that most PCPs have enrolled in the program, that PCP satisfaction is high, particularly due to increased access to psychiatric consultation and services, with PCPs experiencing up skilling as an indirect result (Holt, 2010).

The Massachusetts Mental Health Services Program for Youth (MHSPY) is a home-based clinical intervention that seeks to maintain youth with severe functional impairment in the community via delivery of integrated primary care, mental health, substance abuse, and social services. Using blended public agency funding, traditional and non-traditional services are provided within a private, not-for-profit, managed care organization. Individualized, comprehensive care plans are developed by an MHSPY care manager, who works intensively with the family and the Care Planning Team to identify needs and resources. Aggregate analyses based on 4 years of data show that MHSPY participants have improved clinical functioning, including significant reduction in risk to self and others. They also experience reduced service utilization and cost and high rates of family satisfaction (Grimes & Mullin, 2006).

**Integrated models of care in youth**

Few studies have addressed the effectiveness of integrated models of care for older adolescents and young adults. A report outlining the service characteristics of three models (‘fee for service’, specialised youth mental health clinic, and the headspace multi-disciplinary centres) showed that specialised youth models provide greater access to a broad range of multi-disciplinary clinicians (Scott et al., 2009). Australia’s national youth mental health initiative, headspace, aims to promote and support early intervention for young people aged 12–25 years experiencing mental illness and/or substance use problems (McGorry et al., 2007b). The establishment of ‘communities of youth services’ (CYSs) is a central component of the headspace model. A CYS is directed by a lead agency on behalf of a local partnership of organisations that provide relevant services to young people – specialist mental health, drug and alcohol and primary care services; vocational services and training; and other services. headspace also provides training and professional support to general practitioners, school counsellors, and
other professionals working with young people (McGorry et al., 2007b). An independent evaluation of *headspace* concluded that the initiative promoted and facilitated improvements in young people’s mental health, social well-being and participation in education, training and employment, and that outcomes were especially positive for young people with early onset and early intervention needs. However, a number of recommendations were also suggested including improving outcome data compliance so that the effectiveness of services could be monitored, and addressing barriers to service use so that hard to reach young people could be engaged with *headspace* services (Muir et al., 2009).

**DISCUSSION**

While there is relatively robust evidence for systems of care that encourage collaboration between mental and primary health care in adult populations, the evidence base for such integration of mental health and psychosocial services for prevention and early intervention for children and youth is disappointingly limited. The few results that do exist are largely promising, but fail to constitute a sufficient evidence base upon which to mount effective, streamed models of care for responding to mental health needs across the 0–25 age span and the manifold environmental and biological issues that give rise to such conditions. Nonetheless, our literature search revealed a number of key principles and components that should guide efforts to provide access to integrated systems of care that recognise the continuities of mental health problems and needs across this age group.

**EFFECTIVE PRINCIPLES OF INTEGRATED SERVICE MODELS**

- Changing outcomes requires a fundamental practice and culture change
- Collaboration is important irrespective of what level of collaboration is achieved
- Integration can be designed with varying levels of intensity
- Patient/carer involvement in care is critical
- Duration of interventions are not necessarily related to the outcome
- Collaborative relationships between primary and mental health care providers require preparation, time and supportive structures

**EFFECTIVE COMPONENTS OF INTEGRATED SERVICE MODELS**

- Case management is the defining feature of many models, but a primary care physician and access to specialists are also core elements
- A team based approach is required, rather than merely adding on other referrals
- Early detection of those in need of prevention and early intervention
- Enhanced, including novel forms of communication between GPs and other professionals
- Joint development of a structured management plan (including crisis plan)
- Pairing of systems of care with treatment guidelines (e.g., decision support systems)
- Systematic follow-up of patients, including treatment use and response
- Patient (or family) education about their disorder and the treatment
- Secure and ongoing funding structures that support collaborative care arrangements (e.g., funding that allows for joint care planning)
- Patient choice about treatment (including families where necessary)
- Care for all aspects of a child/adolescent/young person’s well-being including physical health
- Co-location to provide relatively seamless transitions between required services or clinicians

Given the continuity of mental health problems from childhood to young adulthood, we propose that there are grounds for establishing and evaluating a model for early intervention in young people aged 0–25 that incorporates partnerships, care pathways and protocols to ensure facilitation of access to age-appropriate and effective mental health care, based on the above key principles and components. The multiple sectors with which a child or young person and their family may interact need to act collaboratively to ensure an approach that is integrated across all sectors of care. An existing proposed service system profile (Raphael, 2000) provides a foundation on which to expand by addressing components.
of care necessary across different developmental stages, providing examples of interventions, and highlighting pertinent workforce and resource issues. There is a need to improve the design and quality of the research framework around the examination of such models of care in order to determine which components, if any, are effective, to assess issues such as sustainability of integrative models of care and to determine settings and patient groups in which this model care may be most effective.

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