



Community Paediatric Review

A NATIONAL PUBLICATION FOR COMMUNITY CHILD HEALTH NURSES AND OTHER PROFESSIONALS

www.rch.org.au/ccch

VOL 14 NO 4 NOVEMBER 2005

An initiative of the
Centre for Community
Child Health,
Royal Children's
Hospital, Melbourne

EXECUTIVE INDEX

Childhood depression: Early risk and resilience	1
Introducing solids to infants – What are the pitfalls?	5

Childhood Depression: Early risk and resilience

The carefree exuberance associated with young children can make the concept of childhood depression difficult to imagine. It is not surprising then that the existence of mood disorders in children has gained acceptance only in the last few decades. While debate continues regarding conceptualisations of childhood depression, evidence from over 20 years of research suggests that the major affective disorders often begin early in life. This article will outline current knowledge of childhood depression, including recent etiological evidence and implications.

What does depression look like in children?

There is no formal diagnostic category specifically for childhood depression, with the mood disorders defined in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994) intended to apply to both adults and children. The key feature of clinical depression is a persistently depressed mood, or pervasive loss of interest or pleasure in nearly all activities. However, for children and adolescents, this

mood may be one of irritability rather than sadness. Associated symptoms include feelings of worthlessness, concentration problems, energy loss, and unusual changes in appetite or weight. These symptoms may occur in the context of major depressive disorder, which is marked by acute depressive episodes lasting at least two weeks, or in dysthymic disorder, in which such symptoms persist chronically for at least two years. Also grouped with the mood disorders is bipolar disorder, which is characterised by intermittent manic episodes. While this article focuses on unipolar depression, much of this information may apply to the less understood disorder of bipolar depression also.

While depressive symptoms may be seen in early childhood, it is unclear whether distinct mood and anxiety disorders can be delineated at this age. Developmental literature indicates that depressive symptoms at this stage may be best grouped with broader internalising problems related to withdrawal and emotion regulation (see Table 1).

Table 1: Examples of depressive and internalising symptoms in early childhood from the Children's Moods Fears and Worries Questionnaire (Bayer, Sanson, & Hemphill, In Press)

<ul style="list-style-type: none"> • Clings to adults • Looks sad, miserable, unhappy • Gets upset over little things • Irritable or cranky moods • Easily disappointed • Tends to be fearful or afraid of new things or new situations • Appears miserable, unhappy, tearful or distressed • Easily hurt feelings 	<ul style="list-style-type: none"> • Disturbed by change • Gives no response when other children attempt to communicate • Prefers to play alone than with other young children • Moves away from the children's group games • Watches the children play rather than participating • Shy/timid with other children
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SUPPORTED BY AN EDUCATIONAL GRANT FROM



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Current epidemiological evidence suggests prevalence rates of 10-15% for preschool age children, and these problems demonstrate considerable stability into mid-childhood and adolescence (Briggs-Gowan, Carter, Irwin, Wachtel & Cicchetti, 2004). Prevalence rates of diagnosable depression have been estimated at approximately 2% in mid-childhood, and 4-7% in adolescence. While pre-pubertal boys and girls exhibit similar rates of depression, females are up to three times more likely than males to develop depression after puberty.

Many neurobiological systems implicated in adult depression are not fully developed prior to adulthood. This may explain why clinical presentations of depression, as well as neurobiological correlates and aspects of treatment response, typically vary with age. Firstly, a number of depressive symptoms common in adolescents and adults occur at lower rates in childhood. These include slowed psychomotor behaviour, pervasive anhedonia, and thoughts of hopelessness, with subsequent increases in the latter associated with cognitive development. The sleep disturbances often seen in depressed adolescents and adults are also less likely to occur in children. Secondly, a number of depressive symptoms are more common in depressed children than adolescents or adults. These include physical complaints such as headaches and stomach aches. Pre-pubertal children also show higher rates of hallucinatory behaviour than any other age group, however these hallucinations are typically less disturbing and compelling than those of psychotic adults (Carlson, 2000).

Difficulty identifying depression in children comes not only from differences in clinical presentation from that of adults, but also from high rates of comorbid disorders often sharing symptoms with those of depression. Compared to non-depressed children and adolescents, those suffering unipolar depression are 8.2 times more

likely to have a comorbid anxiety disorder; 6.6 times more likely to have conduct disorder or oppositional defiant disorder; and 5.5 times more likely to have attention-deficit/hyperactivity disorder (Angold, Costello, & Erkanli, 1999).

One key to distinguishing depression from more common childhood psychopathology is the monitoring of change in depressive symptoms. For example, while poor concentration may be symptomatic of both ADHD and depression, in the context of the former it will be consistent across time and settings, while in the latter it will more likely fluctuate in distinct episodes. Monitoring of the timing and magnitude of changes in a child's behaviour by parents or professionals in regular contact with a child can contribute greatly to differential diagnosis.

Causes and risk factors

The specific causes of childhood depression are not well understood. Available evidence does however indicate that there are multiple pathways to depression, and that the impact of particular risk factors on a child will depend on the presence or absence of other risk or protective factors (see Table 2).

As evidence of these risk and protective factors grows, so too will the effectiveness of interventions to develop resilience in young children at risk for depression. It is well established that the children of depressed parents are at elevated risk for developing depression themselves, and it appears that this transmission may occur through a combination of processes. It has been suggested that these children may inherit genes that confer vulnerability to depression in some environments but not others, or are associated with cognitive styles (eg. ruminating) that lead to depression (Costello, Pine, & Hammen, 2002). Various genes may also predispose children to other disorders (eg. anxiety) that in turn increase risk for depression.

Table 2: Family risk factors for childhood depression

- Parental depression or other psychopathology (eg. substance abuse)
- Child abuse and neglect
- High levels of rejection/criticism in parent-child relationship
- Early parental loss (ie. through death, separation, abandonment)
- Authoritarian and controlling parenting styles
- Discordant relationships within the family
- Socioeconomic adversity

Introducing solids to infants – What are the pitfalls?

For a number of years there had been some controversy over the appropriate timing of complementary foods to infants. It is with this background that the World Health Organisation (WHO) requested a review of the literature to establish the appropriateness of their recommendations. As a consequence, new guidelines were released in 2001 (Who, 2001). The new guidelines recommend that complementary foods should be delayed until 6 months. It has been stressed in the literature review, however, that this is a population based recommendation and that infants must be managed individually so that appropriate interventions are provided (Kramer & Kakuma, 2004).

By all standards of good nutrition, babies younger than four months who are exclusively breast-fed, or appropriately artificially fed, should not be given solids. The case for delaying complementary foods is based on the health of breast-fed infants and their mothers. The strongest evidence for the recommendation from the infants' perspective is a reduced incidence of gastrointestinal disease and the absence of any growth deficit. For mothers, the benefit is in prolonged lactational amenorrhoea and greater post-partum weight loss (Kramer & Kakuma, 2004).

Despite the recommendation to delay complementary foods until six months, there is no clear evidence that it is detrimental (in terms of morbidity) to introduce complementary foods earlier (at four months) amongst infants who are healthy, live in environments without major economic constraints, and have low rates of illness (Who Working Group, 2002). It is more of a case that there is no benefit. It should be pointed out, however, that early introduction of solids (between four and six months) may impact negatively on breast-feeding. This should be discussed with any woman who has made the decision to start solids early so that breast-feeding can be protected.

Introducing complementary foods before four months is where there is a real concern regarding health risk:

- *Developmental Readiness:* The infant needs to have sufficient muscle control and swallowing ability to handle a solid food bolus. The infant who is able to sit with support, has good head control and regularly explores objects orally indicates a readiness to try complementary foods (Morin, 2004).

- *Immature Gut / Immune system:* Digestive, absorptive and immune processes take time to mature. For example – gastric acid secretion does not reach significant volumes until the third or fourth month of life, pancreatic amylase is virtually absent in early infancy (Milla, 1986). The immaturity of these processes place the very young infant at risk of diarrhoeal disease (Wright, Parkinson & Drewett, 2004).

There have also been associations drawn between early introduction of complementary foods (before four months) and increased risk of allergy, respiratory disease, excess weight gain, and other diseases. These associations, however, are not yet definitive.

The single most common reason given by parents for early introduction of solids is that the child needs solids because they appear to be hungry (Wright et al, 2004). Unsettled behaviour after a breast-feed or an artificial feed could be seen as evidence of lack of satisfaction. Use of inappropriate first solids like milk arrowroot biscuits at two to three months is still reported by Child Health Nurses. The minor morbidity associated with these practices is poorly documented. One study has linked earlier weaning with increased parent reported diarrhoea and greater attendance at medical general practice (Wright et al, 2004).



depressive and internalising symptoms to access support and intervention. This may involve helping parents to identify problem behaviours by providing accurate information about normal social and behavioural development across early childhood, and emphasising the importance of intervening before the development of serious problems. It can be helpful to explain to parents that while a shy or inhibited temperament alone is not necessarily a problem, particular approaches to parenting may be important in protecting against internalising outcomes. Parents can be made to feel empowered by explaining that they are in the most powerful position to help their child with such problems at this age. In the event of suspected internalising problems, a referral to Child and Adolescent Mental Health Services for comprehensive assessment should be considered.

Final thoughts

While our society has become increasingly cognisant of the problem that is adult depression, childhood depression remains poorly understood. This is not surprising given that depression often resembles or is masked by a range of other disorders. In identifying young children at risk for developing depression, it appears particularly important to be aware of family history, and to directly observe interactions between parents and their children. It also appears that building resilience in young children may be best achieved indirectly, by addressing the functioning of the family rather than that of the child.

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Reflection Questions

1. Do you have the opportunity to observe parent/child interactions when you are working with a family?
2. How confident are you in discussing parenting styles with families you work with?
3. Who would you refer to if you believed a child was demonstrating depressive symptoms?

Aspects of parenting practices and the home environment may also play an important role in the development of childhood depression. Associations between major depression and abuse, maltreatment, and related forms of environmental adversity are well documented in child and adolescent research. However, it cannot be assumed that a child has been abused simply because he/she exhibits depression. Conversely, it has been found that caregivers who are responsive to infant/child needs may buffer risk for depression and other forms of psychopathology (Werner & Smith, 2001). It has also been shown that the healthy development of affect regulation may be dependent on the quality of caregiver-infant interaction (Kaufman, Plotsky, Nemeroff, & Charney, 2000).

Various child characteristics seen in early childhood may also be predictive of later depression. Research has linked a temperament characterised by fearfulness with risk for developing subsequent internalising problems (Gilliom & Shaw, 2004), however this risk is not specific to depression. There is some evidence that a more specific early childhood marker may be a motivational pattern of helplessness in response to challenging tasks, which has been found to predict depressive symptoms five years later (Kister, Ziegert, Castro, & Robertson, 2001).

Treatment and prevention

While adult depression is commonly managed with pharmacological treatments, the same medication is not always effective with children. The most empirically supported non-pharmacological treatments are those based on Cognitive Behavioural Therapy (CBT). CBT interventions consist of components including:

- emotion education – eg. distinguishing emotions, linking emotions to events,
- self-monitoring – eg. observing and recording thoughts and feelings linked to events,
- cognitive reframing – eg. challenging negative interpretations of events, and
- problem-solving – eg. using role-play to practice responses to specific social and interpersonal difficulties.

These interventions, however, may only be appropriate from middle to late childhood onwards, as they rely on

the language and cognitive abilities that emerge at this stage of development.

Treatment outcome research with depressed children and adolescents has however generally met with mixed results, leading to a growing emphasis on prevention and the development of resilience in young children. Research has indicated two general approaches that may be useful in achieving these aims:

1. *Targeting high risk groups:* Based on the broad risk factors outlined in Table 2, children at elevated risk for developing depression can be identified early and provided with psycho-education and skills designed to protect against the onset of later problems. This approach however may be more appropriate for older rather than younger children, with some evidence of success coming from work with the adolescent children of depressed parents.
2. *Targeting risk factors:* An alternative approach, and one that is perhaps most suited to early childhood, involves intervening to modify the specific risk factors associated with depression. Examples of this include the treatment or prevention of postnatal and maternal depression, as well as efforts to improve the responsiveness of parents in interactions with their young children. Child health nurses are well suited to undertake such efforts, which may include educating parents about child needs at various stages in early development and appropriate responses to these needs, as well as modelling such responses and providing support and encouragement to parents as they develop these skills. Based on other risk factors, this approach may be particularly important with children who exhibit a fearful temperament, or helplessness in response to challenging tasks.

There is also some evidence that the treatment of the disorders that commonly co-occur with depression may indirectly prevent depression. In the case of anxiety, for which prevention/intervention programs are better established than those of depression, such programs have been shown to protect somewhat against the subsequent development of depression (Costello et al., 2002).

Acting on the signs of risk

Child health nurses can play an important role in encouraging parents of young children exhibiting

There are also health concerns when the introduction of complementary foods is delayed:

- *Delayed feeding development:* Feeding behaviour proceeds from sucking to biting and chewing. Chewing improves the mouth and tongue coordination which is important for speech development. A delay in feeding progress, therefore, may impact negatively on speech (MacDonald, 2003). It may also lead to greater difficulty in overall food acceptance. This has in fact been demonstrated, with the conclusion that six to eight months is the developmentally correct age for the introduction of chewable foods (Paine & Spegiorin, 1983).
- *Growth failure:* At some point, a woman's capacity to lactate is no longer able to exclusively meet the nutritional demands of her growing infant (MacDonald, 2003)
- *Nutritional deficiency:* The risk of specific nutritional deficiencies increases with a delay in complementary foods. Nutrients of concern include iron, zinc, vitamin A, vitamin D and vitamin B12 (infants of vegan mothers) (Paine & Spegiorin, 1983).

The reality is that inappropriate weaning practices still occur, therefore child health professionals continue to play a vital role in providing sound, expert advice to guide parents. We continue to strongly support the recommendation to delay complementary foods until six months. It is important, however, to provide information that balances general recommendations with the individual infant's needs.

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Reflection questions:

1. What advice do you currently give to parents about the introduction of solids? Is this consistent with the WHO organisations?
2. Do you give different information to mothers who are breastfeeding compared to artificially feeding mothers? Explain.
3. What information would you ask of a parent of a 4 month old, to enable you to give advice about the introduction of solids?

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