Encyclopedia on Early Childhood Development

Anxiety and depression

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Synthesis

How important is it?

Mental health problems experienced in adulthood often begin in childhood and adolescence. It is estimated that 1 in 7 children suffer from mental health problems worldwide. One of the major types of mental health issues found in childhood is internalizing problems. Internalizing problems are characterized by emotional distress turned inward, which makes these problems difficult to recognize. Unlike normal fear, shyness and sadness, internalizing problems impair a young child's functioning and development.

Internalizing problems include depression and anxiety. Symptoms of depression in older children include feelings of sadness, eating/weight problems, sleep disturbance, loss of energy and low self-esteem. Although the controversy about diagnosing depression in young children is ongoing, symptoms can be experienced as early as 3 years of age. By 2030, the World Health Organization expects depression to become the second most important burden of disease after HIV/AIDS.[1]

Anxiety disorders can also cause significant distress and impairment in young children and merit special consideration. Anxiety problems exist when children's emotional reactions are disproportionate to the nature of the situation they are facing (ex.: tearful outbreaks when being separated from a parent) and when they interfere with the child's life. Anxiety disorders often preceed major depression.

Although distinct from each other, depressive and anxiety symptoms often overlap and co-occur. This is especially obvious in posttraumatic stress disorder (PTSD). PTSD is a severe psychological condition that can develop following exposure to a trauma and seriously impairs a person's functioning. An early traumatic experience can lead to long-lasting effects and children who live through it are at risk for developing PTSD.

What do we know?

One of the reasons for the controversy in diagnosing a child with depression or an anxiety disorder is that traditional assessment tools were developed for adults and do not adequately capture impairments that are specific to different developmental stages (e.g., disturbance in family routine). In addition, it is often difficult for young children to explain how they feel. Fortunately, new innovative methods such as puppet interviews and picture tests have been used to help children express their emotions.

The first signs of internalizing problems are often observed in the peer group, where depression and anxiety can manifest themselves as self-consciousness, fearfulness, preoccupation and nervousness. Children with internalizing problems often struggle with initiating contact or conversation, talk very little and make infrequent eye contact. These socially withdrawn behaviours make them more likely to be victimized by peers. The friendships of anxious or depressed children also tend to be less frequent, of poorer quality, and with children who also display internalizing problems, which can worsen existing problems. However, having at least one close friend can also protect a child from some of the detrimental effects of internalizing problems.

Both genes and environment put children at risk for developing internalizing problems. One of the most robust risk factors for anxiety is behavioural inhibition, an early temperament trait characterized by intense fear, distress and reactivity to new situations. The odds of developing anxiety disorders in later life are much higher for children who are behaviourally inhibited in early childhood. Children who are behaviourally inhibited are often socially withdrawn and, as a consequence, are at risk for peer rejection, which can exacerbate feelings of anxiety and isolation.

The link between behavioural inhibition and social withdrawal appears to be particularly strong for children who display attentional bias to threat, a cognitive distortion often related to anxiety. Skills involving executive functions such as cognitive monitoring and inhibitory control can also elevate anxiety in behaviourally inhibited children.

Environmental risk for internalizing problems include certain parenting behaviours. The magnitude of the effect of parenting is small, but appears to be a consistent risk in the development of internalizing problems. Children of mothers who are overprotective, overcritical or use harsh discipline tend to have poor emotion regulation skills and are more susceptible to emotional health difficulties. Parents who are themselves anxious can also put children at risk for anxiety disorders by modeling avoidant or anxious behaviours. The effects of these parenting behaviours are especially strong for children with behavioural inhibition.

Poor attachment is another risk factor for the development of anxiety and depression. Caused by a history of unresponsive and insensitive caregiving environment, an insecure attachment can lead children to develop poor emotion regulation skills and a negative sense of self, both associated with internalizing problems.

What can be done?

An initial necessary step in understanding the development of childhood depression and anxiety is to expand assessment of these conditions in the clinical and research setting through multi-method, multi-session and multi-informant techniques. While including a screening for internalizing problems during standard check-ups might be ideal, targeting at risk children and families may represent a more cost-efficient and realistic method to prevent or reduce negative consequences associated with internalizing problems. For instance, accurate screening in locations where children are at risk for experiencing trauma (e.g., hospitals) or identifying children who are behaviourally inhibited at an early age can have a major impact on children, their families and society at large.

Parents can be reassured that several individual treatments have been found to help children who are depressed or anxious, although consistent treatment programs remain to be developed. Anti-depressant medications have been used with some success among children as young as 6 years, but their use is now limited as a last resort option because of health concerns. Cognitive behavioural therapy (CBT) is the most common and effective method to treat anxiety and depression in childhood. CBT focuses on helping children identify and confront their own distorted thinking habits and involves behavioural techniques that gradually expose children to anxiety-provoking situations. Play-based CBT has been used with children as young as 4

years of age.

Involving parents in treatment is beneficial in reducing symptoms of depression and anxiety. CBT often includes parents in the treatment agenda by coaching them on exposure techniques and teaching them management skills pertaining to anxiety. These interventions further enable parents to optimally adjust their parenting style to their child's temperament, by becoming less overprotective and less anxious. In cases of posttraumatic stress disorder, interventions should target both the needs of the child and the parents to reduce distress of all parties and promote family functioning.

Early intervention that includes psychoeducation, parental involvement and coping skills training is also key to preventing the development of serious and enduring mental health problems. Early social interactions with peers should be supervised by parents and teachers to check for early signs of internalizing problems, and can even be an ideal target for early intervention focused on social skills training. A collaborative effort between parents, health professionals and child care workers promises to be most effective in creating a stable and coherent environment for children.

Policy makers interested in children's mental health should give priority to evidence-based programs and quality intervention studies examining treatment effectiveness for depression and anxiety in childhood. Information should be disseminated to service providers about the manifestation of anxiety and depression in early childhood as these internalizing problems often go undetected. Service providers dealing with childhood trauma should also be aware of the systemic impact of a traumatic experience on the family as a whole.

Note:

[1] The WHO global burden of disease (GBD) measures burden of disease using the disability-adjusted-life-year (DALY). This time-based measure combines years of life lost due to premature mortality and years of life lost due to time lived in states of less than full health. The DALY metric was developed in the original GBD 1990 study to assess the burden of disease consistently across diseases, risk factors and regions. (http://www.who.int/topics/global_burden_of_disease/en/)

Recognition and Assessment of Anxiety & Depression in Early Childhood

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Introduction

Anxiety disorders are characterized by emotional arousal associated with fear, worry, or nervousness that is out of proportion to the situation. Significant fears in preschool-aged children have been documented since the 1920s,[1] but only recently have anxiety disorders in early childhood been widely recognized as impairing and deserving of specialized treatment. Young children's anxiety often manifests as fearfulness, defiance or tearful outbursts in stressful situations (e.g., separating from a caregiver). Diagnosis of depression in early childhood remains controversial, but symptoms seen in older children, including sadness, appetite/weight problems, sleep problems, low energy and low self-esteem can represent a distinct syndrome in young children.[2] To meet diagnostic criteria, symptoms must be severe enough to impair normal functioning. Most young children with depressive symptoms do not meet criteria for a *DSM-IV* diagnosis, but experts agree that children can experience the core symptoms of depression by age 3.[2]

In psychopathology research, assessment is designed to capture psychological phenomena to deepen understanding of disorder presentation, course, risk factors and treatments. Assessment in a clinical context refers to gathering screening and/or clinical data to inform clinical judgments regarding the diagnostic presentation of a specific child and to tailor individualized interventions to promote optimal social, academic and family functioning. The key to valid, reliable assessment is employing a multi-method, multi-informant approach that includes repeated clinical observations, diagnostic interview, developmental history, and standardized, comprehensive symptom checklists.[3]

Subject

Few studies have closely studied the prevalence of psychiatric disorders in preschool-aged children. Research from the United States reported prevalence rates as high as 9% for anxiety disorders and 2% for depression among preschool children.[4] A recent study in Scandinavia also found 2% of children to be affected by depression, but rates for anxiety disorders were much lower (1.5%).[5] While most childhood fears and transient sadness are normative, some children suffer from emotional problems that cause significant distress and impairment, limiting their ability to develop age-appropriate social and pre-academic skills and/or participate in age-appropriate activities and settings. Assessment is necessary to understand the phenomenology of emotional symptoms and identify young children in need, which is paramount to connecting them with ameliorative services.

Problems

Researchers struggle to distinguish variations in temperament, (stable individual differences relating to reactivity and self-regulation), from symptoms of psychopathology. There is also inconsistency regarding studying anxiety and depressive symptoms as a single "internalizing domain" or as two clinically-distinct presentations.[6,7] Similar issues with how to classify symptoms are reflected in the lack of consensus as to whether emotional problems should be conceptualized and studied in a categorical versus dimensional fashion.[8] Diagnostic criteria (DSM-IV-TR)[9] are often inappropriate for young children and do not capture developmentally-salient types of impairment (e.g., disruption in family routine), which make it difficult to apply psychiatric research methods. Despite significant advances in the assessment, recognition and treatment of early childhood emotional disorders,[10-12] rates of mental health service receipt and participation in prevention programs remain low, especially for ethnic minority children and those living in poverty.[13-16]

Research Context

Several widely-used parent-report "checklist-style" assessments (e.g., Child Behavior Checklist,[17] Infant-Toddler Social and Emotional Assessment,[18] Behavior Assessment System for Children[19]) cover a broad range of functioning, including internalizing, externalizing and other problematic behaviours in early childhood. Other methods include the Preschool Age Psychiatric Assessment,[20] a structured diagnostic parent interview, and laboratory observation. Young children are often unable to describe their own emotional experiences using traditional methods. Hence, the Berkeley Puppet Interview uses child-friendly puppets to help preschool-aged children identify symptoms.[21] One novel assessment, the Picture Anxiety Test, uses pictures to aid young child report of anxiety.[22]

Advancing the study of emotional assessment in young children necessitates a conceptual distinction between temperament and internalizing symptomology. For example, behavioural inhibition (prominent shyness in novel and social situations[23]) has long been considered a normative temperamental profile that increases risk for developing an anxiety disorder later in childhood,[24] but for some children may represent an early onset of disorder.[10,25] Unfortunately, most assessments do not capture child or family impairment, which is one way to distinguish between these constructs.

Evidence suggests that anxiety and depressive symptoms are correlated but distinct entities,[26] although they are seldom studied separately in young children. Whereas emotional symptoms reflect biological processes and mechanisms, there currently exists no biological "test." Some psychophysiological assessments (galvanic skin response, heart rate, breathing, pupil dilation, stress cortisol) can identify anxiety-related patterns of autonomic arousal, but a clinical diagnosis still requires diagnostic interview to assess symptom onset, duration, severity and associated impairment. Finally, emotional symptoms tend to be relatively stable throughout childhood if untreated.[27,28]

Key Research Questions

1. How can assessment methods be improved to minimize reliance on parent report, while still remaining minimally labor-intensive?
2. How can assessments differentiate between temperament and clinically-significant emotional symptoms?

3. What criteria should be used to diagnose anxiety and depressive disorders in young children, or would employing a dimensional approach be advantageous?
4. How can awareness and recognition be improved to increase participation in prevention and early intervention efforts?

Recent Research Results

Significant advances have been made in assessment methods and age-appropriate diagnostic criteria for emotional disorders in young children.[29-31] Differentiation between symptoms of individual anxiety disorders (e.g., separation anxiety, generalized anxiety) has been found as early as two years of age.[6] One novel assessment tool for children aged 3-5, the Preschool Anxiety Scale – Revised, captures these various dimensions of anxiety symptoms.[32] In addition, attentional bias to threat has been identified as a possible candidate for assessment of risk for anxiety disorders.[33]

Regarding depression, novel findings underscore the validity of preschool diagnoses, as well as potential targets for assessments. For example *functional magnetic resonance imaging (fMRI),* children with a history of preschool-onset depression demonstrated distinct patterns of brain activation, which were similar to those of adults with depression.[34] Other research documents that DSM-IV criteria for depression do not adequately capture the disorder's course in preschool-aged children.[35] Similar to the heightened awareness regarding preschool depression, evidence suggests that young children can also suffer from post-traumatic stress disorder when age-adjusted diagnostic criteria are employed.[36]

Research Gaps

More research is needed to fully understand the phenomenology and diagnostic presentation of emotional disorders in young children. This is especially true for depression, which is often difficult to differentiate from behavioural disorders since both are characterized by elevated irritability and reactivity. More research is needed to improve integration of data from observational systems, clinical interviews, child-report assessments and measures of child and family impairment. Research that identifies meaningful ways of distinguishing between temperament and clinically -significant emotional symptoms is also needed. Finally, research is needed on best practices for increasing awareness of clinically significant emotional disturbances in young children to better engage parents, pediatricians and educators in early identification, prevention and intervention efforts.

Conclusions

Recent advances in assessment methods have made it clear that young children can suffer from serious emotional disorders. These disorders are distressing and impairing to young children and their families and present similarly to disorders in older children. Advancements have led to improved assessment methods (i.e., diagnostic interviews, observational systems, child-report assessments, psychophysiological tests) that reduce sole reliance on parent reports and increase diagnostic validity and reliability. Methods for improving the developmental appropriateness of diagnostic criteria for emotional disorders have also been proposed. While these advances mark substantial progress, more research is needed. A lack of consensus remains on the boundary between temperamental variation in emotional reactivity and emotional psychopathology and how to

differentiate these constructs. Despite availability, screening tools for identifying young children at risk are underutilized, partly due to limited awareness among pediatricians, parents and educators. Even when identified, rates of parent participation in clinical services, including prevention efforts, remain low.

Implications for Parents, Services and Policy

The lack of awareness regarding the importance of identifying and ameliorating young children's emotional disturbances is one of the greatest challenges facing advances in assessment and identification of early childhood emotional problems. This problem is manifested by low levels of treatment-seeking behaviour by parents,[14] as well as the rarity of referrals from pediatricians and early educators. Compared with externalizing problems, such as aggression, emotional symptoms tend to be more difficult to recognize and assess, and because they are less disruptive, they are less likely to get noticed. However, it is clear that young children can struggle with distressing and impairing emotional problems that warrant sophisticated assessment and treatment approaches. Emotional disorders interfere with important aspects of development by reducing exposure to challenging situations that are essential for social development and learning. With this in mind, researchers continue to refine assessments and screening measures to identify young children in need of services, but dissemination and broad systems for implementation are still developing.

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Posttraumatic Stress Disorder in Young Children

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Introduction

Posttraumatic stress disorder (PTSD) is one of the more serious and debilitating mental disorders that can occur following trauma. Research indicates that consistent with older children and adolescents, young children also typically manifest with the traditional three PTSD symptom clusters of re-experiencing the event (e.g., through nightmares, posttraumatic play), avoidance of reminders of the event and physiological hyperarousal (e.g., irritability, sleep disturbance, exaggerated startle).[1] However, research has shown that the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV- TR)[2] PTSD criteria does not adequately capture the symptom manifestation experienced by infants and preschool children and underestimates the number of children experiencing posttraumatic distress and impairment.[3] A growing number of research studies have since provided support for including an age-related subtype of PTSD for preschool children in the DSM-V.[4,5]

Prevalence, course and consequences of trauma reactions

Studies with young children that have adopted developmentally sensitive PTSD criteria have reported prevalence rates of 6.5%-29% for acute stress reactions within the first month following a motor vehicle accident (MVA)[6] or burn injury[7] and PTSD rates that vary from 14.3%-25% within 2 months following a variety of injury types (e.g., burns, gun shots, MVA, sporting),[8,9] 10% 6 months post MVA or burn[6,8] and 13.2% on average 15 months after burn injury.[10] Following physical or sexual abuse rates of developmentally sensitive PTSD have been reported of between 26 and 60%.[1,3,11] Our research has shown that young children also develop depression, separation anxiety disorder (SAD), oppositional defiant disorder (ODD) and specific phobias following burn injury[8] and these disorders are highly comorbid with PTSD.

Research with children of all ages has shown that untreated PTSD can follow a chronic and debilitating trajectory.[8,12,13] These findings are concerning given that young children's neurophysiological systems, including the stress modulation and emotional regulation systems, are still in the process of rapid development.[14] Additionally, trauma during childhood has been associated with permanent structural[15] and functional[16] brain impairment as well as the onset of psychiatric disorders,[17] health risk behaviours and physical health conditions in adulthood.[18] Therefore trauma that occurs during early childhood may have even greater ramifications for developmental trajectories than traumas that occur at a later stage of development.

The role of parents

When working with traumatised children it is also important to be aware that the child's trauma and the child's response to the trauma can also be traumatic for parents and can be a source of chronic stress. Research indicates that approximately 25% of parents will experience clinically elevated levels of acute stress, PTSD, anxiety, depression and stress within the first 6 months of their child's trauma.[19-21] While the majority of parents are likely to be resilient or improve to below clinical levels over time, parental distress during the acute phase has been shown to contribute to the development and maintenance of trauma symptomatology in injured children.[19,20,22]

It is widely recognised that the quality of the parent-child attachment, parental mental health and parenting behaviours are crucial factors that influence a child's adjustment following trauma.[14,23,24] For young children, the parent-child relationship is particularly important as they lack the coping capacities to regulate strong emotion and are therefore dependent on a sensitive and emotionally available caregiver to assist with affect regulation during times of distress.[14,23] Additionally, young children are particularly reliant on their parents' reactions to determine how to interpret or respond to an event and may therefore model their parent's fear responses and maladaptive coping responses.[25] Parents may also directly influence their child's exposure to traumatic reminders (e.g., allowing avoidance of conversations), and thereby impede their child's habituation to the event.[25]

The impact of adverse parental psychological responses on the quality of the parent-child relationship and the development of children's trauma symptoms, combined with parental distress in its own right, represent important reasons to also attend to the needs of parents to both reduce parents' own distress and to promote parents' ability to assist their children. Interventions that target child distress, parent distress and the parent-child relationship are likely to be beneficial in reducing the subsequent development of parent and child posttraumatic stress reactions. However there is only preliminary evidence to support these types of interventions in the acute stage, and more research is needed.

Prevention and early intervention

Unfortunately, the majority of children and parents who experience psychological difficulties after trauma are not identified or provided with appropriate support. Given that trauma is common and that early childhood may represent a "sensitive period" of brain development, there is an urgent need for effective interventions that decrease the risk of children and parents developing chronic posttraumatic stress reactions. There is considerable potential for intervention in high risk settings such as hospitals to reduce the risk or prevent the onset of traumatic stress reactions through screening and indicated prevention or early intervention programs.[26] Early identification and intervention with 'high-risk' families, when symptoms first present, can prevent problems from becoming entrenched or at least minimise the impact of these problems on the child, family and society. However, the challenge is to be able to differentiate between individuals who experience transient distress and those that are at risk of developing chronic PTSD[13] so as not to over-burden the resources of busy hospitals. There are no validated screening methods that are available for very young children, and this is a significant gap in the field.

To date the majority of research has been on treatment of chronic PTSD rather than early intervention and many unanswered questions remain in both the adult and child literature regarding who should receive early

intervention and what the optimal time-frame, content and length of early intervention should be.[27] To date, systematic reviews provide the strongest support for multi-session trauma-focused cognitive behavioural therapy (CBT) interventions provided to 'high-risk' individuals within the first 3 months of trauma exposure.[27]

Research with children has found that information-based prevention interventions within 2 weeks post accidental traumatic injury were associated with reduced child anxiety symptoms, at 1 month[28] and 6 months post injury.[29] Additionally, Landolt and colleagues have found support for a single-session early intervention at reducing depressive symptoms and behavioural problems, in a sub- sample of preadolescent children (7-11 years) involved in road traffic accidents.[30] Berkowitz and colleagues,[31] have conducted the only indicated prevention program (4-session child-caregiver intervention consisting of assessment, psychoeducation and coping skills) for children (aged 7-17 years) that has been effective at reducing child PTSD diagnoses and symptoms following a range of traumatic events.

In contrast, for young children (< 6 years), there are currently no known published studies examining the effectiveness of preventive psychological interventions following trauma. However, Scheeringa has shown that a 12-session cognitive behavioural therapy for PTSD protocol conducted with 3-6 year old children exposed to a variety of traumatic events was feasible and effective in reducing established posttraumatic stress symptoms.[32]

Few studies have included an intervention component that also targets parent distress following a child's trauma. Kenardy and colleagues found that psychoeducation provided to parents within 72 hours of their child's accident was effective at reducing parental posttraumatic symptoms at the 6-month follow-up.[28] Melnyk et al[33] have examined the effectiveness of an early intervention program for parents of children (2-7 years) who were admitted to a paediatric intensive care unit. They found that parents in the intervention group had significantly lower stress, depression and PTSD symptoms and their children exhibited fewer internalising and externalising difficulties post discharge.

Research is urgently needed before evidence-based clinical recommendations for the prevention of PTSD with young children can be made. However, based on results from a recent meta-analysis, Landolt and colleagues have recommended that early interventions target children screened as 'high-risk' and include multiple sessions that involve psychoeducation, individual coping skills, parental involvement and some form of trauma exposure.[34]

Implications for Parents, Services and Policy

Posttraumatic stress in young children is under-recognised. Health services need to become better skilled at detection of posttraumatic stress in young children. This will involve in-service and post professional training. Routine screening may be the ideal but in terms of cost, identification within a high-risk subset may be preferable. Also any screening program will need to be linked into a clinical service with the capacity to deliver appropriate care. Parental distress is a significant contributing factor in post trauma responses in children. However it is likely to be under-recognised in clinical settings. This may be because the distress is not of a clinical severity or because the focus is on the child's needs rather than the family.[22] Services need to become more aware of the broader impact of trauma on the family system.

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Parent-Child Relationships in Early Childhood and Development of Anxiety & Depression

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Introduction

Parents play a substantial role in shaping children's emotional health, particularly in early childhood.[1] To better understand the impact of the parent-child relationship on the development of anxiety and depression in young children, research has focused on three main constructs 1) the degree to which a parent may be overprotective and/or critical, 2) parental modelling of anxiety and 3) the security of the child's attachment to his or her caregivers.

Subject

One of the key factors involved in the maintenance of anxiety disorders is the degree to which the child avoids feared situations. Parenting behaviours, such as overprotection, that serve to accommodate or enhance avoidant strategies are likely to impact on the maintenance and development of anxiety disorders.[2] Overprotective and overinvolved parenting is likely to lead to reduced opportunities for the child to approach new and potentially fearful situations. By reducing these opportunities, it is theorised that the child is less able to habituate to the perceived threat in these situations, less able to learn to accurately detect threat in new situations and less likely to learn they can cope with difficult situations. Another parenting style that has received attention with respect to the development of emotional health problems is critical parenting. Critical parenting has been consistently associated with depression and, to a lesser extent, anxiety.[3-5] It is hypothesized that parents who criticise and minimise the child's feelings, undermine the child's emotion regulation and increase their sensitivity to emotional health problems such as anxiety and depression.

Parental modelling of fearful behaviour and avoidant strategies is also likely to increase a child's risk of developing later emotional health problems.[6] An anxious parent may be more likely to model anxious behaviour or may provide threat and avoidant information to their child, increasing the child's risk of anxiety disorder. It is theorised that the impact of an anxious parent, as well as an overprotective and critical parent, may be exacerbated in the context of a child with an inhibited temperament.[2]

Finally, an insecure parent-child attachment has also been identified as a risk factor for the development of anxiety disorders.[7] Attachment is defined as the intimate emotional bond that forms between a child and caregiver and different patterns of attachment have been identified.[8] An insecure, in contrast to a secure,

attachment is one in which the child experiences the caregiver as unpredictable or does not experience comfort from the relationship. Attachment theorists propose that an insecure attachment occurs when the caregiver is unresponsive and insensitive to the child's needs. It is an insecure attachment that has been associated with anxiety and depression.[7,9-11] It has been proposed that children with an insecure attachment are not able to develop adequate emotion regulation skills or a positive sense of self.

Problems

A significant problem arising in this area of study is the accurate assessment of the parent-child relationship. Early research examining overprotective and critical parenting focused on retrospective reports from adults with anxiety and depression, leading to potentially biased reports.[12] More recently, researchers have used observational methods to assess parental overprotection and negativity.[13] Observational methods however, are not without problems, as parents may behave more positively when being observed in a research laboratory or at home.

Research Context

The majority of studies examining the relation between parenting behaviour and emotional disorders are cross-sectional in design thus limiting their ability to test causality. A few longitudinal studies, along with a small number of experimental studies, have recently emerged allowing an improved estimate of the causal impact of parenting behaviour on emotional health. The majority of this research focuses on school-aged children with few studies investigating parent interactions with younger children.

Key Research Questions

1. What parenting behaviours are associated with anxiety and depression in early childhood?
2. Is there a causal relationship between parenting behaviours and anxiety and depression in early childhood?
3. Is the impact of parenting behaviours greater for children with an inhibited temperament? In other words, do these parenting behaviours increase the risk of emotional health problems in all children or only in children already at risk for anxiety (e.g., inhibited children)?

Recent Research Results

Longitudinal studies have recently emerged showing that overprotective parenting in early childhood is associated with later anxiety disorders.[14] For example, Hudson and Dodd[15] followed a group of inhibited and uninhibited children from the age of 4 years. In this study, children's anxiety at age 9 was predicted by the child's anxiety and inhibition at age 4 but also by the mother's anxiety and the mother's overprotective behaviour: Greater maternal anxiety and maternal over-involvement predicted greater child anxiety. This finding has also been demonstrated in a number of other studies. In this study, the security of a child's attachment and maternal negativity did not predict later anxiety. Although these findings provide support for the relation between parenting and later psychopathology, these effects are only likely to be small. In support of this, a meta-analysis reported that overall parenting accounts for 4% of variance in anxiety in school aged children and 8% in child depression.[5]

Although theoretical models propose that parenting behaviours should interact with a child's temperament to increase risk, there has been minimal support for this type of interaction. Instead, the findings to date suggest that this relationship may in fact be additive, that is, the parenting behaviour may increase risk for all children not just children with an inhibited temperament.[15] In contrast, Rubin and colleagues[16] showed that mother's observed intrusive behaviour and derisive comments moderated the relation between toddler inhibited temperament and social reticence at preschool.

With regards to parental modelling, there have been a number of studies demonstrating that parent anxiety can be transmitted through modelling and verbal transmission of threat and avoidant information.[17,18] In one experimental study, young infants showed increased fearfulness and avoidance of a stranger following exposure to a socially-anxious mother-stranger interaction.[19] In this study, the effect was stronger for children with an inhibited temperament.

Research Gaps

The majority of research to date has focused almost exclusively on mothers. Knowledge about the role of fathers in the development of anxiety and depression in early childhood is limited. Fathers may in fact play a unique role in preventing the development of emotional health problems through encouraging risk-taking and encouraging 'rough and tumble' play. Further research investigating the role of fathers is needed.

Although some longitudinal research has emerged, further research is needed to assess the causal role of these parenting behaviours in the development of emotional health problems as well as the possible interactions between temperament and parenting. One of the difficulties of research examining the transmission of anxiety from parent to child is to examine the impact of parenting or parental modelling independent of the influence of shared genes.

Conclusions

Parenting has a small but significant impact on the development of anxiety and depression in young children. The most consistent evidence for this relationship has come from research examining maternal overprotection and child anxiety. Research has demonstrated a clear link between maternal overprotection and anxiety disorders in young children. Evidence for the causal nature of this relationship has started to emerge but further research is still needed to better understand the intricacies of this relationship and, particularly, its bidirectional

nature. Theories propose that certain parenting behaviours should have a greater impact in the presence of an inhibited child but the empirical evidence for this has yet to be convincing.

Another body of research has demonstrated that parents can have an impact on their child through modelling anxiety. The degree to which a parent behaves in an anxious manner by either showing fearful or avoidant behaviours or by communicating threat to the child has been shown empirically, in a number of experimental studies, to impact on subsequent child emotion and behaviour. Longitudinal research which shows the impact of this modelling, over and above the influence of shared genes is needed.

The security of a child's attachment with their parent has been linked to later psychopathology. Given the overlap with other constructs (such as the child's temperament, other parenting behaviours) the degree to which attachment independently predicts child outcome is uncertain.

Implications for Parents, Services and Policy

Understanding which parenting behaviours increase a child's risk for later emotional health problems has direct implications for early intervention. The findings to date suggest that reducing overprotective parenting and reducing parent anxiety (and hence anxious modelling and verbal transmission of threat and avoidance) would be important in preventing later emotional health problems. Theoretical models predict that parenting strategies should be aimed at parents of inhibited children, however empirical evidence has yet to fully support this notion and would suggest that all parents should be taught to use strategies to increase a child's autonomy (rather than overprotective strategies). Still, there remains an argument for specifically targeting parents of at-risk children. With risk being so far identified as additive (rather than multiplicative), overprotective parenting increases an inhibited child's already high-risk status. For a child who is uninhibited, the increased risk conferred by an overinvolved parent may be inconsequential. Thus, targeting parents of inhibited preschool children may prove to be a more beneficial approach.

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Temperament in Early Childhood and the Development of Anxiety and Depression

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Introduction

Anxiety disorders, in general, and Social Anxiety Disorder (SAD) in particular, produce considerable acute suffering and increase the risk for long-term adverse outcomes. Most adult anxiety disorders begin in childhood or adolescence,[1] with exceedingly common rates between 5% and 10%; and rates of SAD varying from 1.6% to 8.5%.[2-4] In prospective research, the temperamental trait of behavioural inhibition emerges as the best known predictor of risk for later anxiety.[5,6]

The topic of this chapter is to briefly examine relations between this temperament and the emergence of anxiety disorders. We will examine the research on two cognitive processes, attention and executive processes, which contribute to the onset of anxiety disorders amongst behaviourally inhibited children. Finally, in line with recent evidence suggesting that behavioural inhibition may not only represent a specific predisposition to anxiety but rather a more general risk factor for internalizing disorders,[7] we will review the existing (yet limited) literature linking early temperament and later development of depression.

Subject

Behavioural inhibition is a temperament that can be identified in infancy and early childhood. Infants with this temperament display heightened distress and motor reactivity to novel stimuli. As toddlers and young children they avoid social encounters and tend to withdraw from unfamiliar social situations making them less assertive[5,6] and prone to peer rejection,[8,9] with its associated negative self-perceptions.[10] As such, inhibited children have fewer friends,[11] and report greater anxiety and loneliness.[12]

Research on risk for anxiety focuses on early temperament, particularly behavioural inhibition.[10,13,14] For example, Schwartz et al.[6] found that 61% of 13 year olds, identified as behaviourally inhibited at age two, demonstrated clear signs of anxiety during social interactions, compared to only 27% of those who were not inhibited. Similarly, Chronis-Tuscano et al.[15] reported four-fold increased odds of a lifetime diagnosis of social anxiety disorder among adolescents with consistently high levels of behavioural inhibition from ages 1 to 7. Data from both studies suggest that early temperament constrains, but does not rigidly determine, outcome. Only about half of inhibited children manifest risk, and anxiety tends to wax and wane over time.[16]

We contend that childhood temperament shapes the manner in which individuals perceive their surroundings, which influences their social interactions in a reciprocal manner and eventual social and mental health

outcomes.[17] This dynamic is particularly evident in early adolescence during which the emergence of the peer group as a more salient influence on development coincides with sharp increases in psychopathology,[16] particularly SAD.[6,15,18] Temperament also shapes vital cognitive processes, such as attention and certain executive processes which provide the foundation from which children perceive and respond to social cues in the environment.

Problems

Questions remain concerning the functional and structural relations between temperament and anxiety.[19] Several reviews[10,17,20,21] have noted a variety of behavioural and physiological similarities as well as distinctions between inhibited temperament groups and anxious individuals. Conceptualized as separate constructs, temperament can either place a child at risk for developing anxiety or influence the stability or severity of anxiety disorders once they have emerged.[10] Alternately, these terms may simply refer to different aspects of the same underlying construct with distinctions between them simply imposed from the field.[21]

Research Context

Literature suggests that perturbations in *both "bottom up"* attention mechanisms and *"top down"* executive control processes may play a central role in the etiology and maintenance of anxiety.[22] These perturbations extend to both emotionally charged and affectively neutral stimuli, reflecting both preferential treatment of specific categories of stimuli (i.e., bias to threat cues) and heightened vigilance of one's own performance and behaviour (i.e., cognitive monitoring).

Anxious children[23-25] and adults[26,27] show attention biases to threat stimuli. Prior work has found[28,29] that clinically anxious adolescents display perturbations in the *amygdala* and ventrolateral *prefrontal cortex* (vlPFC) responses to threat while completing an attention bias task. As such, biases to threat represent early, automatic "bottom up" attention mechanisms that shape cognition and behaviour. Research also implicates a distributed network within the prefrontal cortex through which attention is deployed to closely monitor performance, incorporating feedback, as individuals then call on more specialized cognitive control mechanisms to modify subsequent behaviour.[30-32] Anxiety related perturbations in this pattern are evident in both children[33] and adults.[34] Imaging studies have implicated the *anterior cingulate cortex (ACC)* in this process, as it appears to be hyperactive in anxious individuals during tasks requiring cognitive or "top down" control.[35]

Key Research Questions

Amongst typically developing, Caucasian children in the United States, around 15-20% manifest the temperament of behavioural inhibition in early childhood. Longitudinal studies have found that around half of these behaviourally inhibited children go on to develop anxiety disorders as adolescents or young adults. A key research question from a perspective of early intervention is to identify what factors contribute to these different trajectories over time. That is, what factors (either within the caregiving environment or within the child) either protect or enhance risk for anxiety.

Recent Research Results

Attention bias to threat

Results from recent studies suggest that behavioural inhibition is marked by perturbations in attention control.[36,37] Two recent longitudinal studies[18,38] have examined the link between childhood behavioural inhibition, attention bias to threat and later emergence of social withdrawal. Pérez-Edgar et al.[18] found that adolescents who were behaviourally inhibited as young children showed heightened attention bias to threat. In addition, attention bias to threat moderated the relation between childhood behavioural inhibition and adolescent social withdrawal. In a separate study, Pérez-Edgar et al.[38] found that behavioural inhibition in toddlerhood predicted high levels of social withdrawal in early childhood. Again, this relation was moderated by attention bias, such that this behavioural inhibition-social withdrawal association was only evident for children who displayed an attention bias toward threat. These data provide support for viewing attention bias to threat as a significant moderator of behavioural inhibition and the later emergence of clinical anxiety.

Executive processes: Inhibitory control and cognitive monitoring

Inhibitory control describes the ability to inhibit and override dominant responses and behaviours in favor of more appropriate or subdominant responses and behaviours.[39] Cognitive monitoring reflects the ability to attend to one's own performance, notice errors and correct behaviour as a result of feedback. These executive processes are thought to play a role in the regulation of negative emotions and temperamental reactivity.[40-42]

A number of studies have found that inhibitory control moderated the temperament of behavioural inhibition to predict heightened anxious behaviours. Behaviourally inhibited children with high levels of inhibitory control were found to be more socially anxious,[43] less socially competent, and more socially withdrawn[44] than behaviourally inhibited children with low levels of inhibitory control. Similarly, White et al.[45] found that high levels of inhibitory control increased the risk for anxiety disorders amongst high behaviourally inhibited children.

Parallel work has found enhanced cognitive monitoring to be associated with heightened anxiety both in adults[46,47] and children.[48] McDermott et al.,[49] found that cognitive monitoring was higher in adolescents with high childhood behavioural inhibition as compared to adolescents low on childhood behavioural inhibition. Moreover, heightened monitoring moderated relations between early behavioural inhibition and later anxiety disorders.[49] Thus, like attention bias to threat, executive processes of inhibitory control and cognitive monitoring moderate child temperament towards heightened risk for anxiety.

Research Gaps

Developmental change occurs as a result of reciprocal interactions between the intrinsic characteristics of a child and his environmental context, making the child both the producer and product of the environment.[50] Behavioural inhibition may initiate a child in one of a number of directions, and the targeted outcome can result from a host of predisposing pathways.[10] Research must therefore account for a number of potential moderating factors that can come into play at various points throughout development. There is limited research examining the discontinuous nature of behavioural inhibition and possible intervening protective factors that may contribute to discontinuity in behavioural inhibition trajectories and subsequent prevention of psychopathology. Discontinuity of these patterns provides an important opportunity for the identification of factors which may potentially be applied in preventive interventions.

Additionally, the link between behavioural inhibition and depression has received less empirical attention. In considering the relations between behavioural inhibition and depression, it is important to note that individuals suffering from anxiety disorders are at an increased risk for developing depression in comparison to non-

anxious individuals,[51] and evidence suggests that in many instances the presence of an anxiety disorder precedes the development of major depression.[52] Given such temporal relations between anxiety and depression, it is important to consider that associations between behavioural inhibition and depression may be largely contingent upon the presence of anxiety. In fact, one study found that social anxiety fully mediated the relation between behavioural inhibition and depression.[53] Similarly, other studies,[54] revealing associations between behavioural inhibition and anxiety and depression employed structural equations modeling which found that a pathway in which behavioural inhibition results in anxiety, which in turn leads to depression, provided the best fit for the data.

Additional studies investigated the specificity of the social versus nonsocial components of self-reported behavioural inhibition during childhood and their relation with young adults' current symptoms of anhedonic depression, social anxiety and anxious arousal. Findings were mixed with some studies revealing that nonsocial behavioural inhibition (''fearfulness''), but not social behavioural inhibition, increased risk for future depression[55] and other studies revealing that symptoms of depression were more strongly related to social rather than nonsocial behavioural inhibition in childhood.[56]

Interestingly, Sportel[57] investigated the additive and interacting effects of behavioural inhibition and attentional control on internalizing dimensions in a sample of non-clinical adolescents. Findings revealed stronger associations of behavioural inhibition than of attentional control with anxiety symptoms and stronger associations of attentional control than of behavioural inhibition with depressive symptoms. Furthermore, while behavioural inhibition was associated with both anxiety and depression, attentional control moderated this association thus reducing the impact of high behavioural inhibition on the generation of both internalizing dimensions.

Finally, in considering temperament as a vulnerability factor for depression, it is important to note that in addition to behavioural inhibition several theorists have developed temperament models that link additional temperamental styles, particularly Positive Emotion (PE) and Negative Emotion (NE) to depression.[58] Many cross-sectional studies have reported that youth and adults with depressive symptoms exhibit diminished levels of PE and elevated levels of NE[59,60,61] and the combination of these have been associated with concurrent depressive symptoms in clinical[62,63] and community samples.[61,64,65] Furthermore, longitudinal studies have found that lower levels of PE[60,66,67] and higher level of NE in childhood[68-70] predict the development of depressive symptoms and disorders. For instance, low PE in preschool-aged children predicted higher levels of depressotypic cognitive styles at age 7 and depressive symptoms at age 10.[71,72]

Conclusions

Behavioural inhibition is a risk factor for the development of internalizing disorders, though research suggests that not all children with this temperament develop a disorder. Current research is focused on describing the complex interplay between temperament and potential moderating factors which may alter temperamental trajectories. Research on endogenous factors suggest that both attention and executive processes are important moderators of behavioural inhibition toward anxiety or resilience from these disorders. While not covered in this review, there is a good deal of work on the role of exogenous factors in moderating the temperament of behavioural inhibition.[16,73]

Implications for Parents, Services and Policy

Identification of young children who are at risk for anxiety disorders and the implementation of prevention efforts to reduce risk are important outcomes of research on behavioural inhibition. Due to the compliant and nondisruptive nature of behaviourally inhibited children, teachers and parents do not necessarily identify these children early in childhood and elementary school. Because only some children with behavioural inhibition go on to develop anxiety disorders it is important to identify both the endogenous and exogenous factors that moderate temperament psychopathology relations. Preliminary research suggests an optimistic picture for preventative strategies and easily accessible education programs for the parents and caregivers of inhibited preschool children.[74] Such programs are aimed at educating the caregivers regarding the nature of temperament and withdrawal and providing techniques through which they may help behavioural inhibition children develop the ability to regulate reactivity to novelty thus promoting the development of social skills and decreasing inhibited and anxious behaviour over time. Finally, innovative approaches including attention and executive process training may effectively reduce anxious withdrawal in this temperamentally at risk population.

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Young Children's Peer Relations: Links with Early Developing Anxiety and Depression

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Introduction

The peer group represents an important and unique context for the development of a wide range of skills and competencies in early childhood.[1] Simply stated, 'playing with friends' helps young children acquire and practice social (e.g., resolving conflicts), cognitive (e.g., perspective-taking), emotional (self-regulation) and communicative skills that provide foundations for their subsequent development. However, for many young children, the peer group may also represent the first setting where the earliest signs of internalizing problems (such as anxiety and depression) are manifested. In the peer group, anxious children may experience feelings of fear, worry, uneasiness, and self-consciousness. Symptoms of depression in the early childhood peer group may include anhedonia (inability to experience pleasure), excessive guilt, and changes in appetite and activity levels.[2,3,4] Of note, symptoms of anxiety and depression can often co-occur.[5,6]

Problems

Research exploring links between internalizing problems and peer relations in early childhood typically rely on parent and teacher reports, and less frequently on naturalistic observations. Parents and teachers have the advantage of being able to observe children's behaviours across a wide range of time and contexts, but may also bring biases to their responses. Observations potentially provide a more objective perspective, but are typically more limited in their context and are comparatively costly and time consuming. A particular challenge for assessing internalizing problems is their 'covert' nature. That is, many of the emotional and cognitive symptoms of anxiety and depression may not be externally evident and young children may have particular difficulties expressing their inner states.

Research Context

Children's peer relations can be studied at multiple levels.[1] For example, at the level of peer interactions, the focus is on children's prosocial (e.g., sharing, empathy), antisocial (e.g., aggressive) and asocial (e.g., shy-withdrawn) behaviours with peers. Peer relationships typically refer to aspects of mutual friendships (e.g., intimacy, conflict), whereas peer groups pertain to children's experiences within a wider social circle (e.g., rejection, exclusion, victimization).

Key Research Questions

1. Do young children with elevated levels of anxiety and depression behave in characteristic ways with peers? Do peer group behaviours predict the later development of internalizing problems?
2. How do peers behave and respond towards young anxious and depressive children?
3. What is the impact of peer relations on the development of anxiety and depression in childhood? How might peers act as an exacerbating (make things worse) or protective (make things better) factor for young children prone to internalizing problems?

Recent Research Results

Social behaviours of anxious and depressive young children

Results from a growing number of studies suggest that young children prone to internalizing problems display characteristic socially-withdrawn behaviours amongst peers.[7] That is, when faced with opportunities for social interaction, be it at preschool, playgroup, or on the playground, anxious and depressive children tend to keep to themselves, refrain from talking, and rarely initiate social exchanges with other children. As well, both anxious and depressive young children demonstrate deficits in social skills (e.g., making eye contact, initiating conversational requests) that may further impede their abilities to participate in peer activities.[8,9,10]

Although anxious children might be interested in social interaction, this desire to approach others is often inhibited by social reticence. As a result, they tend to spend more time onlooking (watching other children without joining) and hovering on the edge of social groups.[8,11] There is some evidence to suggest that young depressive children also experience social impairment.[12] For example, children who display greater depressive symptoms are more likely to be rejected by peers.[10] Moreover, deficits in social skills (e.g., social participation, leadership) and peer victimization predict depressive symptoms in childhood.[13,14] There is also substantial longitudinal evidence linking social withdrawal in childhood with the later development of more significant internalizing problems.[15,16,17] For example, Katz and colleagues[18] followed over 700 children from early childhood to young adulthood and described a pathway linking social withdrawal at age 5 years – to social difficulties with peers at age 15 years – to diagnoses of depression at age 20 years.

Peer responses to anxious and depressive children

Even in early childhood, anxious and depressive children tend to experience negative responses from peers. For example, young children who display symptoms of internalizing problems are more likely to be disliked and excluded by peers.[10,16] Both anxiety and depression in early childhood are also associated with peer victimization.[14,19] As well, there is evidence (predominantly with older children) that anxious and depressive children have fewer friends, and that their friendships tend to be of lower quality.[16,20,21,22,23] Furthermore, children tend to select friends with similar levels of anxious or depressive symptoms, which may exacerbate their own social difficulties.[24] Although it has been suggested that symptoms of anxiety and depression can be difficult to detect in childhood,[25] it seems clear that the group behaviours of anxious and depressive children do not go unnoticed by peers. It is likely the behavioural characteristics of anxious and depressive children that evoke more negative responses from peers: social withdrawal and other socially-unskilled behaviours (regardless of whether they arise from feelings of anxiety/depression) are strong predictors of concurrent and subsequent peer rejection and victimization.[10,15,26,27]

Impact of peer relations on the development of anxiety and depression

Being excluded, rejected, and victimized by peers can have long-term negative consequences for young children.[1] In particular, the experience of chronic peer victimization in early childhood can promote the later development of anxiety and depression.[14] Unfortunately, not only are anxious and depressive children more prone to experience problematic peer relations, they also appear to be particularly vulnerable to the negative impact of these experiences.[28,29,30] For example, Gazelle and Ladd[31] found that kindergarten children displaying early signs of anxiety who were also excluded by peers were more likely to remain anxious and develop depressive symptoms through the 4th grade. In contrast, young anxious children who were not excluded were less likely to remain anxious and did not tend to develop signs of depression. However, there is also at least some evidence to suggest that socially-withdrawn, anxious and depressive children can also particularly benefit from positive peer relationships.[29,32,33,34] For example, Laursen and colleagues[35] reported that having at least one close friend attenuated links between social isolation and the development of internalizing problems in early childhood.

Research Gaps

Despite increased attention towards the early signs of internalizing problems in young children, there remains limited research specifically examining the potentially important role of peers. Within this limited research itself, very little is known in particular about the links between depressive symptoms and young children's peer group experiences. It will also be important for future researchers to more closely examine the role of social skills and peer relations with respect to specific 'sub-types' of internalizing problems. For example, there is at least some evidence to suggest that certain forms of anxiety (i.e., social anxiety) might be more strongly associated with social skills deficits than others (i.e., generalized anxiety).[36,37] As well, there has been little research explicitly exploring the role peers might play in early intervention programs designed to assist young anxious and depressive children.

Conclusions

Peers play an important and unique role in children's development. The peer group is also a common setting for young children to display early signs of internalizing problems, such as anxiety and depression. Anxious and

depressive young children often experience significant challenges in their social relationships with peers. To begin with, young children prone to such internalizing problems tend to be quiet and withdrawn in the company of peers and may also display poor social skills. Perhaps as a result, young children with internalizing problems are more frequent targets for peer exclusion and victimization. In and of themselves, such negative peer experiences carry with them an increased risk for a host of later social, emotional and academic difficulties. Unfortunately, young children prone to internalizing problems also appear to be particularly vulnerable to these negative effects – which often heighten symptoms of anxiety and depression. This can create a negative cycle that serves to exacerbate risk for longer term maladaptive outcomes. However, there is at least some preliminary evidence (particularly among older children) that positive peer relationships (e.g., a close friendship) can help to 'buffer' (protect) anxious and depressive children from some of the negative consequences of early internalizing difficulties.

Implications

Some potentially important implications can be derived from this review for parents, early childhood educators, teachers, and practitioners. First, we need to continue to raise awareness about the early emergence of anxiety and depression in young children, as symptoms of internalizing problems can often go unnoticed by others. Second, parents, teachers, and others should monitor young children's early social interactions as a potential window into their emotional well-being. For example, a child who frequently displays quiet, reticent and socially-withdrawn behaviours when amongst peers may warrant closer attention. Similarly, early evidence of peer group difficulties such as exclusion or victimization should not be allowed to continue unaddressed. In this regard, peer group behaviours can serve as potential 'marker variables' (i.e., early warning signs) of internalizing problems. Finally, appropriate early intervention has been shown to effectively decrease symptoms of internalizing problems in young children.[38,39,40] The peer group may provide an important context for supporting these early intervention approaches. Moreover, building social skills and promoting positive peer relationships may have direct benefits for young anxious and depressive children.

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Treatment of Clinical Anxiety and Depression in Early Childhood

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Introduction

Relatively little is known about anxiety and depression in early childhood, and diagnosis and treatment options for both are limited. However, interest in the area is growing.

Subject

There is increasing recognition that young children do experience symptoms of anxiety and depression, and are capable of experiencing these at clinical levels of severity. However, research into these conditions in young children has lagged substantially behind that of older children and adolescents.

Problems and Research context

Despite symptoms of anxiety and depression being common in this age group, we have very few treatment options specifically targeted to young children. Treatment research that has included this age group has often also included much older children and has not reported the results separately for different age groups. Therefore, treatments that, superficially, appear appropriate for younger children, may not be so.

The question of whether we need to treat young children with these symptoms also remains. While in older children there appears to be some moderate degree of continuity of symptoms into adolescence and adulthood,[1,2] we simply do not know whether this is the case for younger children. Although unlikely, it is possible that younger children's symptoms remit with time and that treatment is an unnecessary burden. Similarly, while experiencing early anxiety and depression is associated with difficulties in other areas, such as academic and interpersonal functioning,[3] it is not known whether this is a cause or a consequence of the child's mental health difficulties, nor whether these difficulties remit with successful treatment.

Key Research Questions

1. Should we treat symptoms of anxiety and depression in younger children?
2. How should we treat anxiety and depression in younger children?

Recent Research Results

Although we know that some temperament styles are associated with increased risk of mental health difficulties

later on, we know very little about the predictive validity of early symptoms of anxiety and depression. This difficulty is compounded by the fact that, in early life, it can be difficult to distinguish between features of a healthy but inhibited temperament, and symptoms of emotional difficulties or anxiety, and in reality the edges are very blurred. For example, high levels of shyness can be part of the personality of a healthy child, or symptoms of a nascent social anxiety disorder. While we might wish to treat a child with an anxiety disorder, it might be inappropriate to pathologize a quiet temperament. Where early intervention is offered, it needs to be done sensitively.

Cognitive Behaviour Therapy-based approaches

Initially, researchers attempted to "downsize" adult treatments for anxiety and depression, in particular, cognitive behaviour therapy (CBT).[4] CBT for children has focussed on teaching them to recognize and challenge problematic thoughts, and using techniques such as exposure and behavioural activation, which are borrowed and modified, from the adult literature. These studies have tended to report fairly positive results[5,6] with an average of around 50-60% of children recovering from their primary diagnosis. However, these studies have generally included a wide range of ages, and, due to limited sample sizes, have been unable to look specifically at outcomes for younger children. In the case of depression, studies have typically not included children younger than nine years of age. However, there is some evidence from the anxiety literature that when applied sensitively, standard CBT approaches might be effective in children aged as young as six[7,8] and, when adapted further, using a play-based approach, to as young as four.[9]

Parenting-based approaches

A second approach, particularly in the anxiety literature, has been to work with parents of these young clients to enable families to provide a style of parenting that is best suited to their child's temperament. For example, one parent-based intervention targeted at symptoms of anxiety in preschool children with a behaviourally-inhibited temperament, reduced diagnoses of anxiety disorders in participants.[10] Another parenting-based approach is Parent Child Interaction Therapy (PCIT), a play-based, parent and child therapy informed by behavioural and social learning theories, that has shown some promise in the treatment of anxiety in young children.[11] Similarly, a parent-only, group-based cognitive-behavioural parenting intervention, aimed at providing young anxious children with a warm, calm, consistent parenting environment yielded significant reductions in anxiety diagnoses compared to an untreated group.[12] These parenting-based approaches tend to have been applied to the younger end of the age spectrum.

In practice, both the parenting-based and the cognitive behaviour therapy-based approaches tend to employ elements of the other: Parenting-based approaches usually coach parents in CBT-based exposure techniques, and most CBT interventions involve parents to some extent, teaching them some basic anxiety- or behaviour-management skills. However, despite evidence of high risk of family dysfunction in families of depressed children, few approaches to the treatment of depression that involve the family have been developed for young children.

Medication

Medication for anxiety and depression is generally recommended only as a last resort in young children.

Although research has shown some efficacy for medication in depressed children aged as young as 6 years, safety concerns have led some national regulatory authorities to restrict or prohibit the use of SSRIs (selective serotonin reuptake inhibitors) in childhood.[13]

Unlike treatments for adults, and sometimes adolescents, treatments aimed at younger children tend to be quite generic, aiming to treat all types of anxiety or depression, rather than focussing on sub-diagnoses. This is probably quite appropriate, given our limited understanding of the validity of the different diagnostic categories in this age group.

Research Gaps

There is little research in this area, so there are many large gaps. We urgently need to know more about how and when symptoms of anxiety and depression in young children predict future mental health problems, and if so, at what stage we should attempt to intervene. In particular, we need to know when a normal, quiet temperament, which should be nurtured and celebrated, tips over into a disabling condition. If intervening, we need to know which approach works best for this age group. Input from cognitive developmental psychologists is likely to be beneficial in this endeavour, guiding the therapist towards features of the developmental process that have gone awry, and helping them to develop techniques that are most appropriate for clients at each developmental stage.

All of the promising psychological approaches to treating young children that are described above (with the exception of standard cognitive behaviour therapy) have thus far reported only a single small trial, wherein the intervention was compared to a no-treatment control. Further larger studies, from external research groups, employing placebo, and preferably other active treatment conditions, are needed.

Substantially more research into the treatment of depression in younger children is needed, as there are currently no interventions that have been tested for children younger than 9 years.

Conclusions and Implications

Much research is still needed to understand anxiety and depression in young children. Even when anxious and depressed young children are identified, many do not receive effective treatment. Although we are making some headway in understanding the causes of these conditions, and the contextual factors that influence them, evidence-based treatment options for this younger age group are very limited. Treatment research seems to have lagged behind the basic science, and rather than being based on our new-found understanding of the development of these conditions, has often developed downsized versions of adult treatments, such as cognitive behaviour therapy. While there is some modest evidence for the utility of these approaches in older children and adolescents, the research has not really focussed on young children, and there is considerable room for improvement. For depression in particular, where contextual factors (family breakdown, parental mental health, social and educational factors) have been shown to be critical in the development of the disorder, these have not generally been the focus of the treatments that appear in the research literature.

Although currently not clearly demonstrated, it seems very likely that significant symptoms of anxiety and depression at this age are predictive of future psychological disorders, and of social, academic, occupational

and physical wellbeing. Therefore, it is likely that effective identification and treatment strategies that are focussed on early childhood will have substantial benefits not just for the individual, but at an economic and societal level too, and are, therefore, worth investing in. The most effective approaches are likely to involve parents, clinicians and child care settings working in partnership, in order to provide the most supportive environment for the child.

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Early Intervention and Prevention of Anxiety and Depression

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Introduction

The World Health Organisation predicts that by 2030 depression will be second only to HIV/AIDS in international burden of disease.[1] Mental health problems that are first identified in adolescence and adulthood, including debilitating depression, anxiety disorders and drug misuse, can have their origins in pathways that begin much earlier in life with childhood mental health problems.[2,3,4]

Subject

In childhood, mental health problems primarily consist of emotional and behavioural problems. Australia's national youth mental health survey reported that these affect one in every seven children aged 4-17 years.[5] Similar rates are reported internationally.[6,7,8] Emotional problems include anxiety and depression. Characterised by inner emotional distress that may not be obvious to others, these disorders are also known as "internalising" problems.

Problems

Cost-benefit economic studies show that, as a general rule, intervening earlier in the life course can be cheaper and more effective than later treatment.[9] Studies following children in the community over time have highlighted persistence of internalising symptoms, from early- to mid-childhood[10,11] and from childhood into adolescence and adulthood.[12,13]

Research Context

While emotional functioning continues to develop from childhood into adulthood, the early years constitute a potential window of opportunity for early intervention and prevention. Children's internalising problems are in part inherited and in part due to environmental[14] factors. Longitudinal research studies show that the single strongest precursor of internalising problems in young children is "temperamental inhibition," manifested as fearfulness and a tendency to withdraw from new situations.[15,16,17,18] Additional known risks for young children's internalising problems are harsh and/or overprotective parenting interactions, and parents' own internalising problems.[11,18,19,20,21,22,23]

Key Research Questions

What is the best way to intervene very early in children's emotional trajectories to prevent anxiety and depression? This article presents current evidence for this question. Preventive intervention in the early childhood years focuses primarily on optimising the child's environment, with a view to managing or preventing the development of internalising difficulties. Parenting interactions have been shown to be the most important environmental factor to influence a young child's behaviour. Parental over-involvement/protection (i.e., shielding from natural challenges in life) and/or harsh discipline (i.e., smacking and yelling) predict young children's internalising symptoms.[19,24] Therefore the main goal of early intervention and prevention programs is to develop parents' skills to identify and respond to their child's emotionally distressed behaviours in effective ways.

Recent Research Results

A recent systematic review of evidence-based preventive interventions for internalising problems among young children (ages 0-8 years)[25] identified randomised controlled trials as the 'gold standard' methodology to assess program effectiveness. The review highlighted that relatively few preventive interventions specifically attended to internalising problems compared to a large evidence-base that exists for child behaviour (externalising/conduct) problems.

Regarding interventions commencing in infancy, Early Start[26,27] had the best balance of evidence for reducing child internalising problems.[25] Early Start is a individual home visiting program in New Zealand that targets at-risk and stressed mothers over two to three years. Services in primary care screened all families for risk, and then coordinated weekly home visits by family support workers given five weeks training. One randomised trial evaluation with a three-year follow up found this intervention improved child internalising problems, parenting interactions (including abuse) and preschool attendance.

Regarding interventions commencing at preschool age, two programs had the best balance of evidence for reducing internalising problems.[25] In Canada, a brief (three month) psycho-educational group-based program tested in a controlled trial with parents of children exhibiting behavioural problems was found to also reduce child anxiety. However, the wait-list control design of this trial means that program effectiveness beyond a few weeks is unknown. In Australia, Cool Little Kids is a brief (three month) program targeting parents with temperamentally-inhibited preschool-age children.[28,29,30] Two randomised trial evaluations including six month and three year follow up showed the program effectively prevented child internalising disorders.

In the Cool Little Kids trials, parents of temperamentally-inhibited preschool age children were invited to participate in fortnightly 1.5 hour parenting groups delivered by a clinical psychologist. Targeting child inhibition and overprotective parenting, this program aims to build preschool children's resilience to situational fears and distressing worries. It teaches parents strategies to modify their preschool child's fear and distress, as well as their own (if relevant). The first trial demonstrated that intervention children developed significantly fewer anxiety disorders than controls by age five years (50% vs. 64%), with even larger effects by age seven years (40% vs. 69%). The second trial targeted parents with anxiety disorders and again found the program significantly impacted inhibited preschool children's anxiety disorders (53% intervention vs. 93% controls). Cool Little Kids is thereby the first (and only, thus far) effective early childhood prevention program for internalising disorders.

Research Gaps

Very few effective interventions exist for young children's internalising problems. With a focus on anxiety, Cool Little Kids is at the cutting edge of early intervention research in the field. Long-term effectiveness data (more than 5 years) need to be collected for relatively brief prevention programs such as Cool Little Kids, which requires sufficient research funding. Another challenge is to assess the effectiveness of the program when delivered across large population representative samples.[31] The potential to systematically screen "at risk" children (temperamentally-inhibited) via a universal preschool service platform and deliver this intervention is currently being investigated in a population-level randomised trial. Further, few studies have reported economic evaluations for early intervention programs for children's mental health.[7,25,32] Such evaluations could include implementation service costs (training, program materials, provider salaries), costs to families (time off work, transport costs), and later health/welfare costs saved from implementing an early intervention.

A very new area for research is identifying depression at preschool age and designing innovative early intervention programs. While the existence of depressive disorders as early as preschool age is gaining recognition,[33,34] a recent review of prevention programs for child depression did not include such young children.[35] Very recently the first pilot work has been conducted on Parent-Child Interaction Therapy as a potential early intervention for preschool children's depression.[33] An absence of treatment programs for young children's depression, together with increasing rates of antidepressant medications being prescribed to children with unknown efficacy, highlight the urgent need to develop and evaluate psychotherapeutic interventions.[33]

Conclusions

Since the 1990s, recognition has grown that young children can experience internalising problems (anxiety and depression), with debilitating effects when they persist over time. Key known risks for young children's internalising problems include both inherited and environmental components (i.e., child temperamental inhibition, parental anxiety/depression, overprotective and/or harsh parenting interactions). An evidence base of preventive early intervention programs for young children's anxiety and depression is starting to develop. The current volume of research on preventive intervention for young children's internalising problems remains small, in comparison to 30 years of research on early intervention for behaviour (conduct) problems. Further research is urgently needed on early prevention for both anxiety and (especially) depression. For anxiety, to date the Cool Little Kids parenting program has the best evidence supporting its efficacy. Advantages of this program include its brevity, targeted approach and evidence that it prevents later anxiety disorders. A population level randomised trial of Cool Little Kids is currently underway in Australia.[31] The existence of depression in preschool age children has only recently been recognised, and the development of innovative early intervention is urgently required.[33]

Implications

Current knowledge of early intervention and prevention for internalising problems has implications for parents, services and policy. Parents can be reassured that effective early intervention for young anxious children exists. Health and education services could plan staff development to implement only early intervention programs with a sound evidence-base. Policy makers could prioritise funding to a) disseminate evidence-based programs and b) conduct more quality early intervention research for young children's anxiety and depression. To disseminate

preventive interventions, Geisen and colleagues[36] note the following important principles:

- Programs should have staff that are properly trained and adhere to program content.
- Intervention "dosage" should be maximised by providing out-of-hours sessions for working parents and on-site childcare.
- It is essential that a professional consultant experienced with the program works closely with new providers, to ensure that components essential for effectiveness are maintained while minimal aspects are tailored to local needs.
- The ability to reduce children's anxiety and depression problems early in life could narrow cumulative disparities in mental health and disadvantage later in life.

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