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Anxiety: A 10-Year Review

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Introduction

Fear is a normative, adaptive emotional response to perceived threats in our lives. Fear responses include physiological manifestations such as increased heart rate and fast breathing, as well as behavioural manifestations such as fearful expressions or crying. These responses serve as important adaptive functions to promote “fight or flight” responses and protective behaviours towards threats. Normative fear follows a well-defined developmental trajectory that is preserved across cultures: stranger anxiety emerges at around nine months old, while separation anxiety occurs in the first year or two in life.

Anxiety disorders can be distinguished from normal fear and anxiety based on high levels of distress and functional impairment.^{1,2} Children may exhibit different presentations from adults. Preschoolers may present with crying, anger, avoidance, freezing, clinging, or even tantrums. Impairment can take several forms including high levels of distress, avoidance of important activities such as school or peer interactions, and disruption of family functioning. A variety of somatic symptoms such as headaches and gastrointestinal disorders may also be observed.

Prevalence

Anxiety disorders are regarded as the most prevalent psychiatric illnesses during the preschool period and across the lifespan. The prevalence of anxiety disorders in preschool children is reported to be around 10–20%.³⁻⁹ Such a wide variation may be associated with geographical location and demographic differences between study samples. A local questionnaire conducted by the City University of Hong Kong between 2013 and 2014 showed that 16% of children in Hong Kong have anxiety levels above the normal cut-off.¹⁰ The median age of onset from retrospective studies is reported to be around six years old.^{7,11,12}

DSM-5 defines anxiety disorders as “disorders that share features of excessive fear and anxiety and related behavioural disorders”.¹³ Diagnostic criteria in DSM-5 are available for 11 anxiety disorders, one with eight subcategories.¹³ Among them, the four most common anxiety disorders experienced in the preschool period are separation anxiety disorder, social anxiety disorder, generalised anxiety disorder, and specific phobia.¹⁴ Studies have shown that anxiety symptoms in preschoolers tend to cluster into specific categories as described above, which supports the use of different diagnoses rather than a single non-specific diagnosis of “anxiety disorder”.^{3,4,15}

The Local Scene in Child Assessment Service

From 2013 to 2022, 4,191 children were diagnosed with anxiety problems or disorders in our service. The data for each year was rather stable and consistent throughout the years. Most of the referrals (around 65%) were from Maternal and Child Health Centres, whereas the remaining were from Hospital Authority or the private sector. Their ages ranged from 2 to 12; 74% of them were aged four to seven when their anxieties were assessed. The ratio of boys and girls was 51:49. The results closely resembled the results of the questionnaire survey in a study conducted by the City University of Hong Kong in 2014 with a slightly higher percentage in boys (17.3%) than in girls (16.2%).¹⁰

Assessment and diagnosis of clinical disorders involves the use of structural screening instruments, checklists, and questionnaires as well as clinical and psychiatric evaluation. General social-emotional screening instruments may include the Strengths and Difficulties questionnaire¹⁶ and the Child Behaviour Checklist.¹⁷ Meanwhile, screening tools for anxiety may include the Spence Children’s Anxiety Scales, the Preschool Anxiety Scale, and the Selective Mutism Questionnaire.

Clinical and psychological evaluation focuses on the frequency, severity, onset, duration of physical signs and symptoms; as well as the degree of associated distress, functional impairment and developmental deviations. Special attention should be given to distinguish clinically significant anxiety from everyday worries and fears, which are common to human experience and normative in specific developmental stages. Diagnostic interviews can be conducted, which include parents, guardians, and teachers, not to mention the use of multiple age-appropriate assessment techniques may also be used, such as direct and indirect questioning, interactive techniques, symptom rating scales and behavioural approach tests.

Comorbidities are common among children with anxiety disorders. Children with anxiety disorder are more likely to have other psychiatric disorders. Research findings revealed that up to 30–50% have comorbid non-anxiety psychiatric disorders, including depression, Attention Deficit Hyperactive Disorder (ADHD), and Oppositional Defiant Disorder (ODD).¹⁶ According to our data as shown in Table 1, childhood anxiety also commonly co-occurs with language problems, attention-related problems, word-learning problems, and Autism Spectrum Disorder features.

Table 1 Developmental Problems Comorbid with Anxiety

	2013–2022 4,191 cases	2022 328 cases
Language problem	36%	40%
Attention-related problem	36%	36%
Word-learning problem/dyslexia	22%	24%
Autistic features/autism spectrum disorder	18%	22%
Borderline intelligence/intellectual disability	19%	18%
Motor problem	14%	16%
Negative mood/depressed mood problem	2%	2%
Family issues	16%	19%

Out of the 328 newly diagnosed anxiety cases in 2022 (Table 2), 84% of these children had at least one another developmental or psychiatric problem. 34% had one, 30% had two, and the remaining 20% even had three or above. Although only 2% of them were simultaneously noted to have negative mood or depression during the assessment, clinicians should bear in mind the heterotypic continuity between childhood anxiety and early adolescent depression.¹⁸

Table 2 Number of Comorbid Problems among Cases Assessed in 2022

Anxiety problem/disorder only	16%
1 other developmental problem	34%
2 other developmental problems	30%
3 other developmental problems	16%
4 other developmental problems	4%

In our evaluation, we also take into account family-based factors that play an important role in determining risk for childhood anxiety, likely through a combination of genetic

and environmental influences. Parental history of internalising disorders may be hereditary and manifested in parenting styles which may in turn influence the child's vulnerability to develop anxiety. Furthermore, socioeconomic status, family structure, and life stressors play a part in the environmental risk factors for childhood anxiety disorder.¹⁴ Children in single-parent families were found to report significantly more anxiety symptoms than children in intact families.¹⁰

In our clinical interviews with the parents, 16–19% of the children were noted to have family members with developmental or psychosocial problems. A number of their siblings have other developmental or psychiatric disorders, including Attention Deficit Hyperactivity Disorder, Autism Spectrum Disorder (ASD), Dyslexia, or Oppositional Defiant Disorder. Some parents have anxiety, depression, substance abuse, or other problems. In addition, the families may be facing marital discord, financial difficulties, or psychosocial hardships.

A body of research from 2021 shows that the prevalence of depression and anxiety symptoms during the COVID-19 pandemic doubled.¹⁹ Yet, our number of referrals for anxiety remains low, and this has been the situation throughout all these years. Thus, we investigated the 32 cases assessed to have anxiety problems or disorders in 2022 in one of our seven centres, Pamela Youde Child Assessment Centre (Kwun Tong). Findings revealed that only six referrers suspected the child to have anxiety, and another two referrers gave some description of anxiety symptoms, making up a total of merely 25% of the referrals. Worse still, 41% of referrers did not even mention anything about emotion. On the other hand, upon our nurses' enquiries, most parents (81%) gave vivid descriptions of the children's emotions, behaviours, and social problems. Although the parents did not acknowledge these emotions or term these behaviours as "anxiety", they remarked that their children were shy, passive, and slow to warm up, and that they would not speak up in front of teachers or strangers and would cry easily. They also

noted their children as having excessive worries over separating from or losing their parents.

Another reason for low number of referrals for anxiety may be due to the fact that some developmental and psychiatric conditions may give rise to symptoms similar to those of anxiety. Among the above 32 mentioned cases, seven were referred to our service as they were suspected to have ASD. Assessment revealed four cases were impressed with anxiety problems or other disorders and not ASD, highlighting the importance of diligent differential diagnosis.

Discussion and Conclusion

Anxiety may have a long-lasting negative impact on children and influence their cognitive, behavioural, and social functions. Early assessment of anxiety, and determining the prevalence and patterns of comorbidities, is necessary to limit its adverse effect in later life.² The current review of our data in the past ten years not only provides findings that are consistent with existing literature, but also offers valuable insights for our future assessment and advocacy work.

Firstly, the issue of anxiety may sometimes be overlooked by many referring clinicians and parents. Advocacy work is needed to raise the awareness of clinicians, and more public education of parents is essential to distinguish between anxiety-related disorders.

Secondly, our data shows consistent findings with the growing evidence suggesting that anxiety is related to other developmental disorders which may lead to homotypic and heterotypic continuity in anxieties as the child progresses to adulthood. Comorbidities may heighten distress and functional impairment, and may worsen treatment outcomes. As such, careful assessment is essential, and at times, a review assessment may be needed to make distinctions between anxiety constructs.

Thirdly, certain presentations of anxiety symptoms may be easily confused with those of other psychiatric disorders, such as ASD. Both children with anxiety and ASD may exhibit similar behaviours such as refusal to greet or perform as instructed, or avoid play with others, and are thus misunderstood as stubborn and rigid. However the underlying reasons are different. This reminds us the utmost importance of differential diagnosis.²⁰

In our data, a number of our families were noted to be facing family problems. It is known that a child with special needs can impose a significant amount of stress on parents, and even on the entire family.²¹ Therefore, assessment of childhood anxiety is not only an individual assessment issue. Through collaboration with parents, clinicians can acknowledge the families' contextual and socio-economic background, and explore their strengths and difficulties with the parents.

Last but not least, only a small percentage of children was noted to have mood problems or depression. While knowing that anxiety disorders are more prevalent in childhood and have an earlier age of onset than depression, we have to be aware that the comorbidity rates for anxiety and depression heighten in adolescence,^{22,23} resulting in rates of comorbidity ranges from 10–15%. Indeed, the United States Preventive Services Task Force recommends screening for anxiety and depression in children as young as 8 years and 12 years old, respectively.²⁴

The Advisory Committee on Mental Health from the Health Bureau was established in 2017 to advise the Government on mental health policies. It also assists the Government in further enhancing the work of strengthening mental health services for children and adolescents, encompassing prevention, awareness, early identification, school and parental empowerment,

timely interventions and treatments, and rehabilitation. The long waiting time at our service and child and adolescent psychiatric service of the Hospital Authority (HA) was addressed in their first work report back in January 2020. Besides the strengthening of manpower of the Department of Health and HA, the Government increased the allocation of recurrent resources to increase the number of educational psychologists (EPs) and improve the EPs-to-schools ratio at those schools with more students with special education needs (SEN). Further expansions were also noted in the number of places under “on-site preschool rehabilitation services”. Coverage of Integrated Community Centres for Mental Wellness (ICCMWs) to secondary school students with mental health needs was expanded. To facilitate efficient communication across various stakeholders to best support child and adolescent mental health, the Expert Group on New Service Protocol for Child and Adolescent Mental Health Services was set up under the Advisory Committee to revamp the service provision model. In addition, the Student Mental Health Support Scheme (SMHSS) was launched in collaboration with the Education Bureau, HA, and Social Welfare Department (SWD) during the 2016–17 school year. It was based on a medical-educational-social collaboration model, to provide support to students with mental health needs in the school setting.²⁵ HA's existing Child and Adolescent Mental Health Community Support Project (CAMcom), that facilitated early identification and intervention for students with mental health problems, has been integrated into SMHSS since the 2018–19 school year. SMHSS expanded its coverage from 17 participating schools in the 2017–18 school year to 210 schools in the 2021–22 school year. As a medical-educational-social collaboration platform, it provides more comprehensive and timely mental health support to students. It also empowers schools to handle the mental health issues of students with professional support and training.²⁶

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The Conceptualisation and Diagnostic Considerations of Childhood Anxiety Disorder

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Childhood anxiety disorders include disorders that share features of irrational and excessive fear with related behavioural disturbances that are developmentally inappropriate and significantly affect achievement in school and daily functioning.¹ The onset of various anxiety disorders is usually observed over different developmental phases; for example, separation anxiety and selective mutism usually first occur during preschool or early school years. Overlapping of symptomatology between anxiety disorders and comorbidity between anxiety and other psychiatric disorders are frequently observed.

Overview of the DSM and ICD

The Diagnostic and Statistical Manual of Mental Disorders (DSM) and the International Classification of Diseases (ICD) are two major classification systems widely used by mental health professionals internationally in diagnosing anxiety disorders. Both classification systems adopted a categorical approach to define mental disorders based on specific features. They have undergone review, and new editions were made.

Major Changes in the Classification of Anxiety Disorder in DSM-5

The Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-5) was released in 2013, and DSM-5-TR was released in 2022. Separation anxiety disorder and selective mutism were categorised under “Other Disorders of Infancy, Childhood or Adolescence” in DSM-IV, and were reclassified under “Anxiety Disorders” in DSM-5. Previously, selective mutism was conceptualised as an oppositional behavioural problem; the term “elective mutism” implied that children chose to remain silent intentionally with

certain people or in certain situations. The current term “selective” is more neutral and acknowledges children’s fear and apprehension that occurs in specific situations and is regarded as a pathology.² In DSM-5, obsessive-compulsive disorder, post-traumatic stress disorder, and acute stress are no longer listed under the nomenclature of Anxiety Disorder. Agoraphobia is a standalone diagnosis and is no longer required to be in the presence or absence of panic disorder in DSM-5.³ In the recent update of DSM-5-TR, the parenthetical of “social phobia” was amended and only “Social Anxiety Disorder” is used.

Major Changes in the Classification of Anxiety Disorder in ICD-11

The World Health Organization (WHO) and the American Psychiatric Association harmonised the structure of ICD-11 and DSM-5, as reflected in the chapter structure of ICD-11. ICD-11 was implemented in 2022. The “Mental and Behavioural Disorders” chapter in ICD-10 was changed to “Mental, Behavioural or Neurodevelopmental Disorders” (MBND) in ICD-11.

Selective mutism was previously named “elective mutism” and classified under “Disorders of social functioning with onset specific in childhood and adolescence” in ICD-10. Consistent with the lifespan approach of ICD-11, selective mutism, separation anxiety disorder, and other emotional disorders with onset specific to childhood were also reclassified under “Anxiety or fear-related disorder”.

In ICD-10, obsessive-compulsive disorder (OCD) was grouped under “Neurotic, stress-related and somatoform disorders”. In ICD-11, OCD has been placed into its own grouping of “Obsessive-compulsive or related disorders”.

ICD-11 emphasises the apprehension of others in social anxiety disorder as the basis for diagnostic differentiation among anxiety disorders. For agoraphobia, social anxiety disorder, specific phobia, and generalised

anxiety disorder, a specification duration of at least several months was added. In ICD-11, the persistent concerns and attempts to avoid the recurrence of panic attacks are considered important and impairing features of panic disorder.

It is important to distinguish normal, developmentally appropriate fear and worries from anxiety disorder. The ICD-11 describes features of normal variation and the duration, intensity, distress, and impairment of disorders in order to prevent pathologising normal behaviours.^{4,5}

Research Domain Criteria RDoC

In 2008, the National Institute of Mental Health (NIH) proposed a Research Domain Criteria (RDoC) which aims to understand complex mechanisms of linkage between brain-behaviour association and the time course of mental health disorders, including anxiety disorder. It provides a research-classification approach based on neurobiology and observable behaviour (positive valence systems, negative valence systems, cognitive systems, social processes, arousal and regulatory systems) and integrates different levels of information (including genomics, molecules, cells, circuits, and behaviour) to explore basic dimensions of functioning in the full range of human behaviour from normal to abnormal.⁶

Pathophysiology of Anxiety

The prefrontal cortex, amygdala, hippocampus, and hypothalamus are responsible for regulating fear-related learning and memory processes. The neurotrophic factors such as brain-derived neurotrophic factor (BDNF) together with neuronal projections and neurotransmitters, such as dopamine, serotonin, glutamate, and gamma-aminobutyric acid (GABA), are implicated in anxiety.⁷ The onset and course of anxiety disorder are multifactorial involving genetic, epigenetic,⁸ and person-environment interactions.

Parallel developments in the Research Domain Criteria

(RDoC) for understanding anxiety, alongside revised conceptualisations of DSM-ICD diagnostic classification systems, may further guide the understanding of the neurobiological basis of psychopathologies, and help in diagnosing, preventing, and devising treatment. The onset of anxiety features may be present in early childhood and can persist throughout the lifespan. Anxiety disorders are highly comorbid among each other, as well as with mood disorders, externalising behaviours, and other non-anxiety psychiatric conditions. Early identification and intervention are important to ameliorate the long-term impact on brain development and impairments in social, educational, and occupational functioning.

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Childhood Depression: Clinical Presentations, Comorbidities, and Impacts on Children's Functioning

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Depression is one of the most common and prevalent mental disorders, and symptoms can be present during preschool years (ages three to five).¹⁻⁴ Preschool depression is a familial disorder which poses significant risks for subsequent depressive episodes, anxiety disorder, attention deficit hyperactivity disorder (ADHD), and suicidality in later life, with studies demonstrating its stability and progression throughout adolescence and adulthood.⁵⁻⁹ Preschool children with depression experience impairments in multiple domains of their lives, but the condition seems to be under-recognised in the clinical setting as the children affected are often not disruptive and they do not spontaneously report distress.⁹ Therefore, it is crucial for clinicians to become aware of the symptoms of early-onset depression so as to enable early identification and implement preventive interventions to interrupt the disease trajectory and ameliorate negative outcomes.

Clinical Presentations and Features

Depression in preschool children is characterised predominantly by the core typical symptoms of major depressive disorder (MDD) as listed in the Diagnostic and Statistical Manual of Mental Disorders (DSM).¹⁰ Irritability can be the primary mood state for the diagnosis of childhood depressive disorders.¹¹ The absence of joy, as well as the preoccupation with negative play themes, may be a key marker of depression in preschool children.¹² Unlike depressed adults, a depressed preschooler may not appear morbidly or obviously sad or withdrawn, and may have periods of brightening or

seemingly normal functioning during any given day. While sadness and irritability are observed in depressed preschoolers, the most sensitive and specific markers that distinguish depression from other early-onset disorders are sad or irritable mood, anhedonia, excessive guilt, eating and sleeping problems, a decrease in activity level, extreme fatigue, low self-esteem, negativity, and diminished cognitive abilities.^{3,13,14} High levels of shame and maladaptive guilt are also related to preschool-onset depression. Depression severity predicts a unique and significant proportion of the variance in preschoolers' experiences of shame based on blind ratings of *story stem* completion. Parent reports of children's guilty feelings and guilt reparation behaviours show that increasing depression severity is associated with more frequent experiences of guilty feelings and less frequent attempts at guilt reparation.¹⁴ Anger rather than sadness is a more predominant feature among depressed and at-risk preschool boys, whereas sadness is a more predominant feature of depressed and at-risk girls.¹⁴ Depression symptoms in children and adolescents vary;¹⁵ in children, physical discomfort (for example, epigastric pain, and headache), irritability, negative cognitions, oppositional or disruptive behaviours, and fights are observed, while in adolescents, physical discomfort, fatigue, weight gain or loss, irritability, depressive mood, hopelessness, low self-esteem, poor confidence, negative cognitions, social withdrawal, deterioration in academic performance, school refusal, deliberate self-harm behaviours or suicide attempts are noted.

On the Anxiety & Depression Association of America website, Dr. Pievsky gave a more detailed breakdown of the clinical features of childhood depression across different ages:¹⁶

1.5 to 4 years old	4 to 7 years old	8 to 11 years old
<ul style="list-style-type: none"> • Clinginess • Difficulty falling or staying asleep • Changes in appetite • Big tantrums that occur multiple times a day, lasting a long time • Being physically aggressive • Crying multiple times a day for a long stretch of time • Self-harm, for example, hitting head against the wall, pulling hair out, or scratching self 	<ul style="list-style-type: none"> • Toileting accidents in the daytime • Difficulty separating from parent, for example, clinging, crying, tantrums that last for a while or occur multiple times a week • Difficulty falling asleep alone or waking up in the middle of the night • Change in appetite • Crying multiple times a day for a long stretch of time • Aggression, for example, hitting, kicking, or biting siblings • Saying they wish they were dead or could just disappear • Self-harm, for example, hitting head against the wall, pulling hair out, or scratching self 	<ul style="list-style-type: none"> • Frequent worrying thoughts • Difficulty separating from parents, for example, clinging, crying often, for example, more than half of the days for at least two weeks • Difficulty falling or staying asleep • Changes in appetite • Physical aggression towards people or property • Does not have friends or thinks nobody likes them • Having new difficulties in school • Explosive anger and moodiness or tantrums on most days • Weight loss • Talking negatively about self, for example, "I'm stupid", "I'm ugly", or "I can't do anything right" • Self-harm, for example, hitting self, cutting self, and saying they wish they were dead or could just disappear

Comorbidities

Preschool depression is often comorbid with anxiety, ADHD, autism spectrum disorder (ASD), subsequent substance use, and disruptive behaviour disorders.^{8,9} Meanwhile, high rates of comorbidity with ADHD and oppositional defiant disorder (ODD) are observed in preschool depression, ranging from 40–60%.^{10,17} Depression is highly comorbid with anxiety disorders, possibly explained by irritability as a transdiagnostic symptom shared among the three disorders.¹⁸ It has also been documented that nearly three in four children with depression have concurrent anxiety,¹⁹ and that comorbidity of depressive and anxiety disorders is associated with a more traumatic childhood. In 57% of the comorbid cases, anxiety precedes depression, and in 18%, depression precedes anxiety.²⁰

Impacts of Depression on Children's Functioning

Many preschoolers are in structured preschool and daycare settings, and adaptive functioning within those settings can provide good markers of impairment. Impairment can be measured in several different domains, such as social and emotional functioning, as well as across contexts such as school and home.¹⁴ Children with high scores on self-assessed symptoms of depression are more likely to have high clinical maladjustment, school maladjustment, emotional symptoms, internalising and externalising behaviours, high emotional reactivity, and high childhood stress.²¹ Depressed children are also more likely to experience health and adaptation problems.²² In a longitudinal study with a community sample of 516 participants, Silver et al.⁵ shows that children with depression between the ages of three and six have significantly higher rates of threshold/subthreshold suicidal ideation or behaviour, and poorer global and interpersonal functioning at age 15 compared to children without depression at age three and six.

Implications on Our Work at CAS

In our assessment setting when coming across cases with suspected childhood depression, it is important to provide parents with psychoeducation on symptoms and warning signs to look out for, as well as contacts of community providers and information on where to access emergency support. Professional help should be sought if: (a) depression does not lift after two to three weeks, (b) there is significant interference with daily life, (c) there is a severe disturbance of sleep and eating patterns, and (d) suicidal thoughts or wishes are expressed.²³ It is also advisable for parents to work on improving partner communication, as it has been shown to reduce tension in relationships, leading to improved parenting competencies and reduced child maladjustment.²⁴ Clinicians may advise parents to listen to children with an open and attentive heart. Imagine the

child's distress by relating it to periods of distress in the parent's own life; remember how that felt, and think about how a child's experience may be similar, or different, to their own's. Do not belittle the child's unhappiness.²³ Lastly, it is also crucial to establish and maintain a support system for both child and parent for emotional and social support.²³

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Parental Factors in Childhood Anxiety and Depression and Implications for Intervention Programme

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Introduction

Studies in recent decades suggest that anxiety disorders and depression can occur earlier in life than previously thought. In Hong Kong, although we do not have statistics on the prevalence rates of childhood anxiety and depressive disorders or problems, it is believed that there is a possibility of underdiagnosis, probably related to the internalising nature of the disorders and the low rate of identification.¹ Nevertheless, the impact of these mood disorders or problems, even in young children, is extensive in terms of emotional, social, and economic costs. Moreover, if these anxiety and depressive symptoms presented at a young age remain unidentified and untreated, they may develop into some emotional disorders in adults. Thus, early identification, intervention, and prevention of childhood anxiety and depression is very important for individuals, families, and the community as a whole. The objective of the present paper is to review the parental factors associated with childhood anxiety and depressive disorders or symptoms so as to shed light on the design of effective prevention programmes.

The Role of Parents in Children's Emotional Development

Parents play a very important role in children's emotional development. Parents' responses, behaviours, teachings, or even their mere presence have impact on young children's emotional health. Their nurturing, love, and care build a strong foundation for children to develop the social and emotional skills essential for a happy, healthy, and fulfilled life. Meanwhile, some parental factors are associated with children's mental health

problems. Understanding these parental factors would give us insight into the prevention of childhood anxiety and depression.

Transmission of Anxiety and Depressive Disorders from Parents to Offspring

Many systematic reviews and meta-analyses, and retrospective and longitudinal prospective studies showed that the offspring of parents with mood disorders were at higher risk for both anxiety and depressive disorders. In their meta-analysis study, Lawrence et al.² found that children of parents with anxiety disorders were significantly more likely to have anxiety and depressive disorders than children of parents without anxiety disorders. The study on Hong Kong Chinese children also confirmed that children of parents with anxiety or mood disorders would show high levels of depressive symptoms.³ With the data from adolescents with parental mental illness receiving specialised mental health services, Heradstveit et al.⁴ revealed that these adolescents had a higher level of psychopathology, more psychiatric diagnoses, more psychiatric comorbidity, and a higher prevalence of anxiety, mood, ADHD, behavioural-, and trauma-related disorders, and they received mental health services for a longer duration, compared to adolescents without parental mental illness in a child and adolescent mental health service setting. The prospective cohort study by Havinga et al.⁵ even found that two-thirds of the offspring of depressed or anxious patients developed a similar condition at 35 years of age.

Parental Factors Associated with Anxiety and Depression

The transmission of mood disorders from parents to offspring is closely related to genetic factors. However, apart from genetic transmission, as with other mental disorders, environmental factors are also involved in the etiology of anxiety and depression. Eley et al.⁶ found that the transmission of anxiety from parents to offspring

appeared to be predominantly environmentally mediated. Indeed, some theories have proposed that the interplay of genetic and environmental factors is of more importance in the development of mood disorders. To develop preventive intervention programmes, it is also more crucial to identify and target those modifiable factors which are potentially within a parent's capacity to change.

Parenting approach and involvement

In the systematic review and meta-analysis which included studies with participants aged 5 to 11, Yap and Jorm⁷ found that several parental factors including aversiveness (i.e., high level of hostility, criticism, and punishment reflecting a lack of parental acceptance), abusive parenting (i.e., severe physical punishment, neglect, and/or sexual abuse), and over-involvement (i.e., parents interfering with age-appropriate autonomy leading to excessive dependence) had a sound evidence of association with the development of childhood internalising problems. Emerging evidence for the parental factor of inconsistent discipline (i.e., failure to consistently enforce rules and consequences) was also identified as a contributing factor for the development of childhood internalising symptoms. In the prospective longitudinal study with parents of Chinese children aged 7 to 12 years old, it was found that parental anxiety and maternal psychological control were critical risk factors in the development of anxiety among Chinese children.⁸ The findings gave support to the hypothesis that the mothers' psychologically controlling behaviour limits their children's autonomy and diminishes their sense of control and abilities to cope with challenges, thereby promoting children's anxiety.

Parent-child interactions

The association between positive parent-child interaction and children's emotional well-being is well established. In their meta-analysis study, Yap and Jorm⁷ found that less warmth from parents was associated with more

internalising behaviours in children. A study by Liu and Merritt⁹ also identified that children with depressive symptoms reported lower parental warmth and higher parental rejection. Poor parent-child relationships combined with childhood maltreatment by age 11 was found to predict the onset of major depressive disorder (MDD) among offspring in a community sample.¹⁰ The findings of a systematic review and meta-analysis with adults by Kidd et al.¹¹ suggested that poor-quality parental bonding in early life may pose adults at a greater risk for anxiety and mood disorders.

Family environment

Exposure to a stressful family environment and adverse life events is associated with a higher risk of developing mood disorders. It was found that higher levels of inter-parental conflicts, hostility between partners, and marital dissatisfaction were linked to increased risk for anxiety and depression in both children and adolescents.^{7,12} Family conflict was also related to higher levels of anxiety and depressive symptoms in children of a very young age range.¹³ Findings from a 14-year prospective high-risk study suggested that exposure to traumatic events was more frequently reported in children of parents with mood disorders compared to the control group, and more importantly, it was found to be significantly associated with the subsequent risk of developing MDD in these children.¹⁴ Similar findings from the Swedish National Registry study suggested that both parental MDD and a disruptive family environment in terms of parental death or divorce had a meaningful impact on the risk of MDD in offspring.¹⁵ On the other hand, balanced family functioning was found to be a protective factor against offspring risk for mood disorders.⁵

Prevention of Childhood Anxiety and Depression

A comprehensive prevention programme focuses on both identifying children at higher risk and providing timely monitoring and effective intervention. It has been

advocated that these programmes should commence at an early age¹⁶ and be delivered universally to young children or their parents.¹⁷ Some promising parenting intervention programmes and strategies to help reduce the risk of developing anxiety and depression are reviewed in the following section.

Intervention programmes for parents

Two parenting intervention programmes, namely the Cool Little Kids programme developed by Rapee et al.¹⁸ and the Tuning Into Kids (TIK) programme developed by Havighurst and Harley¹⁹ were found to be effective in helping young children to manage their anxiety and/or emotions. The Cool Little Kids programme aims to prevent the development of anxiety in preschool children while the TIK programme aims to help parents enhance their children's behaviour and emotion knowledge. Studies showed that the Cool Little Kids programme helped reduce the anxiety symptoms in children, while the TIK programme was effective in enhancing parents' self-reported emotional competence and emotional knowledge on children.¹⁷ In the local context, we also have studies evaluating the effectiveness of these two programmes. The preliminary findings of 15 parents attending all six sessions of the Cool Little Kids programme in Child Assessment Service showed that there was a trend of improvement in the reported anxiety symptoms of their children, although the pre- and post-treatment differences were not statistically significant.²⁰ The randomised controlled study by Chan et al.²¹ on the TIK programme reported significant reductions in punitive parenting and parenting stress, and such positive effects were maintained six weeks after the intervention. The results are indeed encouraging, supporting further application and work of these programmes in Hong Kong.

Parenting strategies

Following up on their study on identifying the modifiable parental factors that are associated with childhood mood disorders, Yap et al.²² employed the Delphi methodology

to establish expert consensus on parenting strategies that are important for preventing depression or anxiety disorders in children aged 5-11 years. A total of 171 strategies were endorsed and organised into 11 sections. The parenting guidelines document can be accessed online: <https://www.parentingstrategies.net>.²³

Conclusion

The present article reviews the important role of parents in children's overall emotional well-being. The research findings gave us insights into the importance of parental emotions and behaviours as contributing factors to children's development of anxiety or depression. In view of these findings, in addition to individual child-based interventions, early family-based interventions are considered effective in the prevention or treatment of childhood emotional problems.^{8,24} Some efficacious prevention or early intervention programmes have been designed for parents. In Hong Kong, we can draw upon these evidence-based programmes or strategies in designing public education to better children's mental health. Further research, such as surveys of local experts, may be conducted before these parenting strategies are applied, to prevent childhood anxiety and depression disorders or problems in the local context.

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Recent Publication and Scientific Presentations

Publication

Chow CP, Wong LY, Poon CYC, Yiu BPH, Wong TPS, Wong M, Yam KY, Ngai SPC. Functional outcome after selective dorsal rhizotomy: a retrospective case control study. *Childs Nerv Syst*. 2023 Nov 18. doi:10.1007/s00381-023-06213-7. Epub ahead of print. PMID: 37979014.

Scientific Presentations

ADHD 應該點樣醫? on 29 June 2024 at Pathways Foundation by Dr CHAN Ying-ting, Purdy.

Evidence based intervention for children with autism spectrum disorder on 21 June 2024 at Tung Wah Group of Hospitals by Dr HUNG Ching-ngar, Vanessa.

Brief introduction of the Hospital Communication Tool Kit on 12 June 2024 at The Hong Kong Society of Child Neurology & Developmental Paediatrics by YUEN Tsan-wing, Janice.

Communication needs and supporting children and adolescents with complex communication needs (CCNs) in hospitals on 12 June 2024 at The Hong Kong Society of Child Neurology & Developmental Paediatrics by LAM Ling, Lorinda.

Unlocking the silence – navigating communication through Augmentative and Alternative Communication (AAC). Children with complex communication needs (CCNs) & recent development on 12 June 2024 at The Hong Kong Society of Child Neurology & Developmental Paediatrics by Dr CHOW Chin-pang, Jasper.

Special learning needs education course in children with autism spectrum disorder on 11 April 2024 at HKU SPACE by LAM Ling, Lorinda.

Early relationships and experiences in first 1000 days matter for a lifetime – why, how and what? on 22 March 2024 at Symposium on navigating the first 1000 days of life, Brain and Mind Institute, Department of Linguistics and Modern Languages of the Chinese University of Hong Kong by Dr CHAN Ying-ting, Purdy.

The needs and the problems encountered by the SEN children on 16 March 2024 at Junior Chamber International (JCI) Victoria by LAU Man-kuen, Apple.

Common developmental problems: development and language delay; dyslexia, ADHD and ASD on 20 February 2024 at Post-registration certificate course in child and adolescent nursing, Institute of Advanced Nursing Studies, Hospital Authority by Dr CHAN Wai-man, Lilian.

Sharing to students of the Master of Arts in Professional Educational Psychology Programme on 16 February 2024 at Faculty of Education, The Chinese University of Hong Kong by Dr LIU Ka-ye, Stephenie.

The hazards, hurdles, and hopes of children in out-of-home care – how can we do better? on 9 December 2023 at The Hong Kong Society of Child Neurology & Developmental Paediatrics by Dr CHAN Ying-ting, Purdy.

Management of children with hearing impairment on 20 November 2023 at Division of Audiology, Department of Otorhinolaryngology, Head and Neck Surgery, The Chinese University of Hong Kong by TSE Lai-ying, Rosa.

Intellectual assessment and assessment of adaptive functioning for children with physical and multiple disabilities on 15 November 2023 at HKU SPACE by LAM Ling, Lorinda.

Special learning needs education course in children with autism spectrum disorder on 9 November 2023 at HKU SPACE by LAM Ling, Lorinda.

童童亮亮的一天 (成長適應) on 4 November 2024 at KeySteps @ JC by Dr CHU Wing-sze, Dorothy.

Holistic care in paediatric pharmaco resistant epilepsy: etiologies based medical, dietary and surgical intervention & neuropsychology on 22 October 2023 at FMSHK Scientific Meeting 2023 of the Federation of Medical Societies of Hong Kong (FMSHK) by POON Wai-kei, Vitti.

Epileptic encephalopathy and cognition on 18 October 2023 at The Hong Kong Society of Child Neurology & Developmental Paediatrics by YU Shiu-man, Effie.

General approach to clinical assessment of children: Assessment of behavioural, social and emotional aspects of children on 18 October 2023 at Department of Psychology, The University of Hong Kong by TSANG Yee-ha, Lucia.

Collaboration of multiple parties for the mental health of children on 4 October 2023 at Division of Educational Psychology, The Hong Kong Psychological Society by CHAN Holing, Sarah.

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How peekaboo changes the world – the impact of interaction on child development on 15 September 2023 at Kindergarten Inspection Section, Education Bureau by Dr CHAN Ying-ting, Purdy.

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