

Children's mental health: Is poverty the diagnosis?

Some of the concerns seen by childhood health professionals may not be diagnosable psychiatric conditions, but emotional and behavioral responses to family financial insecurity.

ABSTRACT: The case of a 6-year-old boy who was referred to a physician by his school counselor for investigation of anxiety and possible attention deficit hyperactivity disorder illustrates the need to consider the role of poverty when addressing mental health concerns. After determining that income insecurity could be contributing to the boy's symptoms, the physician used a poverty intervention tool to screen for the effects of poverty and make recommendations to prevent adverse health outcomes. Mental health and behavioral concerns are common in children and youth presenting with undifferentiated complaints in both pediatric and primary care settings. Psychiatric disorders are frequently multifactorial and require a comprehensive assessment of the patient's environmental context, including the family's socioeconomic

status. Poverty is a risk factor for mental health conditions in childhood and is associated with lower academic achievement and impaired cognitive development secondary to direct effects on the developing hypothalamic-pituitary-adrenal axis and indirect effects on a child's environment. British Columbia's childhood poverty rate is well above the national average and is compounded by significant unmet core housing need and widening provincial income disparity. We recommend screening for poverty with office-based interventions and accounting for income insecurity in all mental health diagnoses and treatment plans. We also strongly recommend implementing a national poverty reduction strategy to address social determinants of health in the early years and improve the health of future generations.

Case data

A 6-year-old boy was referred for assessment and treatment recommendations by his school counselor because of anxiety, school difficulties, and possible attention deficit hyperactivity disorder (ADHD). The boy was from a two-parent family and had a 14-year-old brother. Both parents were employed, the father as a cargo delivery driver and the mother in a hospital cafeteria. The boy's mother had started shift work 6 months previously and was working 6 days a week so that the family could meet increasing rent costs. They lived in a small two-bedroom apartment and the boy slept on the pull-out couch in the living room because his 14-year-old brother demanded priva-

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cy. The family could no longer afford after-school care for the boy as they had done the previous year, so he was picked up from school by the brother and watched TV and played video games every day after school while his parents were working.

First visit

The boy attended the first visit to the physician with his mother, who reported that the child had no previous history of anxiety or psychiatric concerns but did have a medical history of asthma. The mother described the boy's recent separation anxiety, difficulty concentrating, trouble falling asleep, and tantrums during transitions at school. Teachers reported the boy was frequently anxious and inattentive in class. In the past the father had been diagnosed with a mild learning disability and the mother described herself as "frequently anxious," although she had never been diagnosed with a psychiatric condition. During the visit the boy was shy, clung to his mother, and looked at her for answers. He occasionally gave one-word answers to questions. There were no other significant findings on the mental status exam. Teacher and parent checklists were provided to collect further details and a second visit was scheduled to complete the assessment.

Second visit

At the second visit with the physician, the boy was accompanied by his father. The boy's growth charts and hearing and vision test results were reviewed. No deficits were identified and he was found to be on track developmentally. His asthma, while relatively mild, was found to be contributing to sleep disturbances. Occasional inattention and concentration difficulties were noted on the teacher checklists, but the symptoms fell

below the diagnostic threshold for ADHD. Written reports indicated the boy was slightly behind in reading skills for his age. The father stated that the separation anxiety and problems at school had begun 6 months earlier, coinciding with his mother's

care had placed stress on the family and affected the boy's sense of security. The impact of sleep on the boy's ability to pay attention and manage emotions was discussed and information about sleep hygiene and good asthma management was provided.

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increased work hours, and that he had started sleeping with his son on the pull-out couch because of the boy's anxiety.

Given the family's economic situation, the physician chose to use a screening and intervention tool for poverty. The father disclosed that the family had not had enough money for necessities for the previous 9 months and had recently started going to the food bank. The father also said he was too ashamed to talk to his son's school about their circumstances and asked the physician about resources for subsidized housing. The family had not filed a tax return for the previous year because of the mother's transitional employment.

Information gathered at the second visit led to a number of recommendations for the family. The parents were told that although their child did not have a clinical anxiety disorder or ADHD, their recent financial struggles and changes in child

The parents were advised to file tax returns so the family would be eligible for income supplements and subsidized housing. Psychoeducational testing was recommended to rule out a learning disability, even though there was likely to be a long wait for testing in the public system, the only option for the family. The parents were advised to enquire about getting their son extra help with homework through the school and were referred to a parenting group for parents of children with anxious temperaments. The physician emphasized the parents were doing their best to care for their son and had given him a good foundation. A follow-up visit was scheduled.

Third visit

At the third visit the parents reported that their son was attending a subsidized summer camp through his school. The family had filed tax returns, obtained low-cost transportation passes, and been waitlisted for subsidized

housing. The boy was receiving a free breakfast and lunch at school and seeing the school counselor regularly. The parents, however, were still struggling financially and reported that their experiences had affected their relationship. Although they were very eager to join the parenting group, they were unable to attend because of their work schedules and lack of child care options.

or ensured the boy received learning assistance for reading and tutoring from a local high school student. With the physician's help, the parents eventually obtained a subsidy for quality after-school care and established a clear routine for their son, including two 30-minute sessions a week when he would go to the park or have special play time with his mother. Within 3 months, the boy's separation anxiety

undifferentiated complaints. These conditions can include anxiety disorders, ADHD, and other neurodevelopmental disorders. In addition, child abuse, trauma, and early adversity can have a significant impact on all aspects of child development and behavior. As children are embedded in their environments, a comprehensive assessment and consideration of their psychosocial circumstances is crucial for accurate diagnosis and treatment recommendations.

Poverty becomes biologically embedded, leading to both functional and structural changes of the developing brain.

The mother was tearful during the appointment, and said she would love to be able to spend quality time with her son at home, like her own mother had with her, but was unable to leave her job. The mother was told that staying at home with children is not the only way to make them feel secure, and that the quality of time spent together counts. The physician acknowledged the family's hard work and provided information on parenting children with anxious temperaments and emphasized the importance of regular follow-up with the school counselor.

Outcomes

Subsequently, the boy's parents met with the school counselor for two parenting sessions, and the counselor

had improved significantly and his teacher noted better focus in class despite the family's continued high stress level and hectic work schedule in attempts to make ends meet.

Discussion

An estimated 12.6% of children and youth age 4 to 17—almost 84 000 young British Columbians—are experiencing a mental health disorder at any given time.¹ Mental health problems in childhood and adolescence have a significant impact on child development and have been identified by many as today's leading pediatric problem.²

Multiple childhood psychiatric conditions come to mind when young children present to primary care physicians or pediatric specialists with

Childhood poverty in BC

According to most recent estimates, approximately one in five BC children age 0 to 17 (20.4%) are living in poverty,³ and the numbers are significantly higher for children of immigrants, visible minorities, and Aboriginal citizens. British Columbia's child poverty rate has remained consistently higher than the national average since 2000, and has increased significantly since the 1989 House of Commons all-party resolution to eliminate child poverty.³ Children of various family types live in poverty, but there is an increase in working poor families living in British Columbia, with one in three poor children having at least one parent who works full time. As of 2013, one-half of children in lone parent families were living in poverty. Food bank use has increased by 25% in British Columbia since 2008. Over 97 000 people used the food bank last year in BC, with 31% of users being children.⁴ Furthermore, families with the fewest economic resources are spending more of their income for inadequate housing, with one-third of all children in lone parent families in BC living in core housing need, representing the highest rate of inadequate housing for all provinces in Canada.³

Income inequality is on the rise in Canada, and particularly in British Columbia, where a family in the high-

est income decile earns 13 times more than a family in the lowest income decile. This staggering income disparity is explained in part by the fact that individuals in BC's lowest earning decile have the lowest income of all Canadians.³

Effects of poverty on children

The World Health Organization has declared poverty the single largest determinant of health for both adults and children.⁵ Children affected by poverty have higher rates of infant mortality, low birth weight, childhood hospitalizations, asthma, obesity, and functional health impairments.⁶ Poverty in early childhood is also associated with increased morbidity and decreased lifespan in adulthood, an association that persists irrespective of the social status one acquires as an adult.⁷ A large and growing body of research, including studies in Canada, the US, and the UK, demonstrates that children living in poverty are significantly more likely to have psychiatric conditions and inferior mental health when compared with peers from families with higher socioeconomic status. This relationship holds across developmental periods, and remains when operationalizing poverty through income, parental employment, and neighborhood income. Children from families living in poverty are 3 times more likely, on average, to suffer from psychiatric conditions, including both externalizing disorders such as ADHD, oppositional defiant disorder (ODD), and conduct disorder, and internalizing disorders such as depression, anxiety, and poor coping skills.^{1,8,9} Furthermore, experts in the field have recently questioned whether some of the behavioral concerns seen by childhood mental health professionals are actually emotional and behavioral responses to inadequate and chaotic

environments rather than diagnosable primary mental illnesses, as illustrated by the case.

Effects on cognition

Children from low-income households are less prepared for formal schooling and perform below their middle-class counterparts on tests of intelligence and school achievement.¹⁰ A recent Vancouver study found that 38% of kindergarten children living in the lowest income neighborhoods demonstrated vulnerabilities in at least one area measured by the Early Development Instrument, which considers physical health and well-being, language and cognitive development, social competence, emotional maturity, and communications skills.¹¹ Children living in poverty have also been found to have deficits in working memory, language abilities, and cognitive flexibility when compared with their middle-class counterparts.¹² Recent neuroimaging research suggests that these deficits are mediated by underdevelopment of several brain areas, including the frontal and temporal lobes and the hippocampus. This underdevelopment is estimated to account for 15% to 20% of achievement deficits.¹³ The longer children live in poverty, the greater their academic deficits and the more likely they are to experience a lifetime of reduced occupational achievement and the persistence of poverty across generations.

Impact on mental health and the developing brain

Living in poverty increases the likelihood of vulnerabilities and adverse childhood events that are themselves known risk factors for the development of mental illness. Children living in poverty are more likely to lack basic resources such as nutritious

food, adequate housing in safe neighborhoods, quality day care, and regular access to health care. Poor children are also less likely to benefit from environmental complexity, exposure to educational activities and materials, and positive parent-led experiences such as reading and conversation.¹² Moreover, children growing up in poverty are disproportionately more likely to be exposed to trauma and stressful life events, including divorce, domestic violence, and punitive parenting practices. Poverty further negatively affects mental health through larger community factors, including social isolation, marginalization, and violence.¹

The mechanism that allows poverty to directly affect the developing brain and contribute to psychopathology is now being elucidated by neuroscientists. Several explanations have been proposed regarding the relationship between poverty and mental health. The concept of allostatic load, or cumulative damage over time, suggests that the excessive, persistent, and uncontrollable adversity experienced by children living in poverty intensifies the activation of the hypothalamic-pituitary-adrenal (HPA) axis and has an impact on the developing brain.¹⁴ Physiological responses to stressful events are mediated by the glucocorticoid and catecholamine system, and prolonged exposure to stressful environments and subsequent heightened neuroendocrine responses are associated with the development of both depressive symptomatology and the hippocampal neuron damage implicated in impaired learning and memory.^{15,16} If early adversity during critical developmental periods leads to permanent changes in the functioning set-point of the HPA axis, then lasting and potentially permanent alterations in neuroendocrine behavioral responses

Table 1. Medication and medical services plans.

Plan	Benefits
Psychiatric Medications (Plan G)	Covers psychiatric medications for individuals registered with a mental health service and demonstrating clinical and financial need.
Recipients of BC Income Assistance (Plan C)	Covers eligible prescription costs for BC recipients of income assistance.
Fair Pharmacare	Covers some of eligible prescription costs based on family income.
Pharmacare Special Authority	Grants full benefit status to a medication or medical supply otherwise not covered for patients with specific medical circumstances.
Non-Insured Health Benefits for First Nations and Inuit	Covers medically necessary health services, equipment, and medications not covered through private insurance or provincial programs for First Nations and Inuit.

Table 2. Income supplement programs.

Program	Benefits
Canada Child Tax Benefit (CCTB) www.cra-arc.gc.ca/E/pub/tg/t4114/README.html	Nontaxable monthly amount provided for families with children under age 18.
Child Disability Benefit (CDB)/ Disability Tax Credit (DTC)	Monthly amount for families caring for children under age 18 with a severe and prolonged impairment in physical or mental functioning (benefit included in the CCTB amount). (DTC: www.cra-arc.gc.ca/E/pub/tg/t2201/README.html)
Universal Child Care Benefit (UCCB)	Taxable monthly amount for families with children under age 6.
BC Early Childhood Tax Benefit	Nontaxable monthly amount for qualifying families with children under age 6.
BC Family Bonus	Nontaxable monthly amount for low- and modest-income families with children under age 18.
Registered Disability Savings Plan	Matching contribution from the Canadian government made to registered savings plan for children with disabilities.

can increase the likelihood of developing mental illness.¹⁴ Thus, poverty becomes biologically embedded, leading to both functional and structural changes of the developing brain,^{17,18} a finding supported by studies demonstrating heightened baseline activation of the stress response system in children living in poverty.^{19,20} And because of the protracted development of brain structures critical for learning and educational functioning, including sustained attention, planning, and

cognitive flexibility, these brain structures are particularly vulnerable to the environmental effects of poverty.²¹

Assessing and addressing poverty

Physicians often recognize the wide-reaching impact of poverty on their patients but report feeling unable to address the issue in a systematic way.²² The poverty intervention tool (<http://ocfp.on.ca/docs/default-source/cme/poverty-and-medicine-march-2013>

.pdf),²³ an evidence-based instrument developed by Dr Gary Bloch from the University of Toronto, can be used to screen for poverty as a health-related risk and to factor poverty into all clinical decision making. A positive answer to the screening question "Do you ever have difficulty making ends meet at the end of the month?" has a sensitivity rate of 98% for identifying patients living in poverty.²³ The targeted interventions outlined in the tool are designed to reduce the effects of poverty and adverse health outcomes in low-income patients, and include specific questions for families with children, seniors, people with disabilities, and First Nations patients living in poverty. Originally developed for use in Ontario, the tool is now available in BC-wide and Kootenay-Boundary versions that include resources and interventions specific to British Columbia (www.divisionsbc.ca/kb/povertyintervention).²⁴

As demonstrated by the case described here, a health care provider can attempt to mitigate the effects of poverty by providing information about support available. This can include plans for low-cost or no-cost medications and medical services (Table 1) and programs for income supplements (Table 2). Health care providers can also inform families working with the BC Ministry of Children and Family Development that they may be eligible for coverage of medically necessary treatments with a physician's letter of support. Finally, because families attempting to deal with a mental health concern using a first-line treatment recommendation may encounter barriers, including the cost of psychotherapy and academic tutoring, health care providers can also suggest solutions for overcoming these barriers (Table 3).

We recommend screening for

Table 3. Possible solutions for families encountering barriers when attempting to obtain first-line treatment for behavioral and mental health concerns.

First-line treatment	Barrier	Possible solution
Medication for psychiatric condition	Cost	<ul style="list-style-type: none"> • Government benefit programs: BC Pharmacare Plan G, Fair Pharmacare, Special Authority program, Non-Insured Health Benefits (NIHB) program.
Medication for medical condition	Cost	<ul style="list-style-type: none"> • Substitutions • Generic preparations • Second-line therapies • Government benefit programs: BC Pharmacare Plan C, Fair Pharmacare
Psychotherapy	Cost (\$175–\$200/hour for private psychologist)	<ul style="list-style-type: none"> • Free counseling through local community services. • Counseling offered at a reduced rate or on a sliding scale by supervised psychology trainees at UBC, SFU, and University of Victoria psychology clinics.
Parenting support	Difficulty attending free parenting group sessions because of work schedule or lack of child care options	<ul style="list-style-type: none"> • Free weekly telephone coaching for parents of children affected by temper outbursts, behavioral difficulties, and anxiety through Confident Parents Thriving Kids program (http://cmha.bc.ca/programs-services/confident-parents-thriving-kids/). Referral from health care professional required. Materials provided include psychoeducation, manuals, and behavioral charts.
Psychoeducational testing	Cost (~\$2000 for private testing)	<ul style="list-style-type: none"> • Free testing in the public school system (wait list up to 2 years long). • Testing offered free or on a sliding scale for a limited number of clients at UBC and other university-based psychology training centres.
Academic tutoring and homework help	Cost (> \$20/hour) Difficulty ensuring child attends after-school sessions because of work schedule	<ul style="list-style-type: none"> • Free tutoring or homework help offered through child's school or by teacher or student volunteers.

poverty and using office-based interventions that account for income insecurity in all mental health diagnoses and treatment plans. And because office based interventions don't reach all families living in poverty, we strongly advocate for implementation of a national poverty reduction strategy to address social determinants of health in the early years and improve the health of future generations.

Summary

The case of a 6-year-old boy referred by his school counselor because of anxiety and school difficulties illustrates the need to consider the role of poverty when addressing mental health concerns. Children and youth seen in primary care settings frequently present with undifferentiated mood

and behavioral symptoms. Given the importance of the psychosocial environment to child development, an assessment of the family and social circumstances is important because symptoms of living in poverty can at first glance mimic the symptoms of mental illness. Income insecurity is increasingly common in working poor families and a growing number of children live below the poverty line in British Columbia. Poverty is a risk factor for mental illness and can affect early cognitive development. Screening for poverty and making treatment recommendations that address a family's lack of income and resources can lead to significant change for children. Early childhood interventions that support the basic needs of children, including access to nutritious food, safe and

affordable housing, quality child care, and regular health care, should be our top health priority if we want to ensure the well-being of future generations.

Competing Interests

None declared.

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