
NATIONAL SCIENTIFIC COUNCIL ON THE DEVELOPING CHILD

Mental Health Problems in Early Childhood Can Impair Learning and Behavior for Life

WORKING PAPER 6



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The National Scientific Council on the Developing Child, housed at the Center on the Developing Child at Harvard University, is a multi-disciplinary collaboration designed to bring the science of early childhood and early brain development to bear on public decision-making. Established in 2003, the Council is committed to an evidence-based approach to building broad-based public will that transcends political partisanship and recognizes the complementary responsibilities of family, community, workplace, and government to promote the well-being of all young children.

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The Issue

SIGNIFICANT MENTAL HEALTH PROBLEMS CAN AND DO OCCUR IN YOUNG CHILDREN. IN SOME CASES, these problems can have serious consequences for early learning, social competence, and lifelong health. Furthermore, the foundations of many mental health problems that endure through adulthood are established early in life through the interaction of genetic predispositions and sustained, stress-inducing experiences. This knowledge should motivate practitioners and policymakers alike to address mental health problems at their origins, rather than only when they become more serious later in life.

Public awareness of significant emotional and behavioral problems in early childhood is growing, as preschool teachers report increasingly major disruptions in their classrooms¹ and kindergarten teachers identify social and emotional problems as a common impediment to school readiness.^{2,3} The emergence of mental health problems in young children occurs within the context of an environment of relationships that can include parents, relatives, caregivers, teachers, and peers. Science shows that this environment of relationships plays a critical role in shaping a child's social, emotional, and cognitive development in the earliest years of life. In turn, problems in these domains affect not only the child, but those who care for, play with, or attempt to teach that child. Thus, while problems in cognitive development are already the focus of much attention, emerging emotional and behavioral problems in the early years are also an important societal issue that must be addressed.

The science of early childhood development also tells us that, for some children, mental health problems may begin early and endure. Although establishing diagnostic criteria for psychological disorders in young children remains a challenge, many children show clear characteristics of anxiety disorders, attention-deficit/hyperactivity disorder, conduct disorder, depression, post-traumatic stress disorder, and other problems at a very early age.⁴ Recent reports suggest that some of the characteristics of neuro-developmental disabilities such as autism can be detected during the first year⁵ and that older children often exhibit the emotional legacy of early abuse or neglect.⁶ Beyond the challenges facing these children and their caregivers, attention to early mental health problems is warranted because these kinds of

problems disrupt the typical pattern of developing brain architecture and impair emerging capacities for learning and relating to others. Most important, there are indications that early intervention can have a profound positive effect on the trajectory of emotional or behavioral problems as well as improve outcomes for children with serious disorders, be they psychological or genetic in origin.

While all children experiencing prolonged adversity are at risk for poor outcomes, studies show that long-term physical and mental health impacts are most likely to affect individuals who are genetically more vulnerable to stress. Early stresses can include child abuse or neglect, family turmoil, neighborhood violence, extreme

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poverty, and other conditions in a child's environment that can prime neurobiological stress systems to become hyper-responsive to adversity.⁷ Exposure to adverse experiences such as these early in life, particularly for vulnerable children, predicts the emergence of later physical and mental health problems, including psychological disorders like depression.^{8,9}

Although mental health challenges for young children share many biological and behavioral characteristics with those of older children and adults, there are at least three ways in which early childhood is a period of special vulnerability. First, psychological health for young children is strongly influenced by their environment of relationships and the support or risks these rela-

tionships confer.¹⁰ Therefore, to understand the reasons that young children may be at risk for mental health impairments, how best to provide assistance, and strategies for preventing these problems from arising, it is important to look at the quality of their early relationships. To a greater extent than is true of older children and adults, viewing the child alone as the “patient” or the source of the problem can lead to costly or ineffective policies and practices.

Second, young children often respond to emotional experiences and traumatic events in ways that are very different from adults. They understand, manage, and talk about their experiences differently from adults. Their self-awareness and capacity to think about their emotions and the events that trigger them are not yet well-developed. These

developmental differences are important to understanding the behavioral and emotional disturbances that young children may experience, how they are manifested, and how to assist them.

Third, there is a broad range of individual differences among young children that can make it difficult to distinguish typical variations in behavior from persistent problems, or normal differences in maturation from significant developmental delays.¹¹ Although many enduring mental health problems have their origins in the early years, many behavioral or emotional difficulties in children and even adolescents are transient.^{12,13,14} Thus, caution is needed when evaluating an infant or young child for potential indicators of emotional or behavioral difficulty.

What Science Tells Us

Significant adversity early in life can damage the architecture of the developing brain and increase the likelihood of significant mental health problems that may emerge either early or years later.^{7, 15,16,17,18,19,20,21} Life circumstances associated with family stress, such as persistent poverty, threatening neighborhoods, and very poor child care conditions, elevate the risk of serious mental health problems and undermine healthy functioning in the early years.²² Early childhood adversity of this kind also increases the risk of adult health and mental health problems because of its

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enduring effects on the body and brain development.²³ Young children who experience recurrent abuse or chronic neglect, regularly witness domestic violence, or live in homes permeated by parental mental health or substance abuse problems are particularly vulnerable. Relationship-based conditions contributing to early emotional difficulties,

such as maternal depression, also have well-documented effects on developing brain function in the early years.^{24, 25, 26, 27, 28}

All of these situations are stressful for children. Persistent activation of biological stress response systems leads to abnormal levels of stress hormones that have the capacity to damage brain architecture if they do not normalize. In the absence of the buffering protection of supportive relationships, these hormone levels can remain out of balance. Known as toxic stress, this condition literally interferes with developing brain circuits, and poses a serious threat to young children, not only because it undermines their emotional well-being, but also because it can impair a wider range of developmental outcomes including early learning, exploration and curiosity, school readiness, and later school achievement.^{15,21,29,30,31,32,33,34,35}

Much impairment in mental health arises as a result of the interaction between a child’s genetic predisposition and his or her exposure to significant environmental adversity. Differences in individual behavioral styles (which child development researchers call temperament) influence the mental health consequences of early traumatic, abusive, or stressful experiences. A young child with a genetic predisposition to

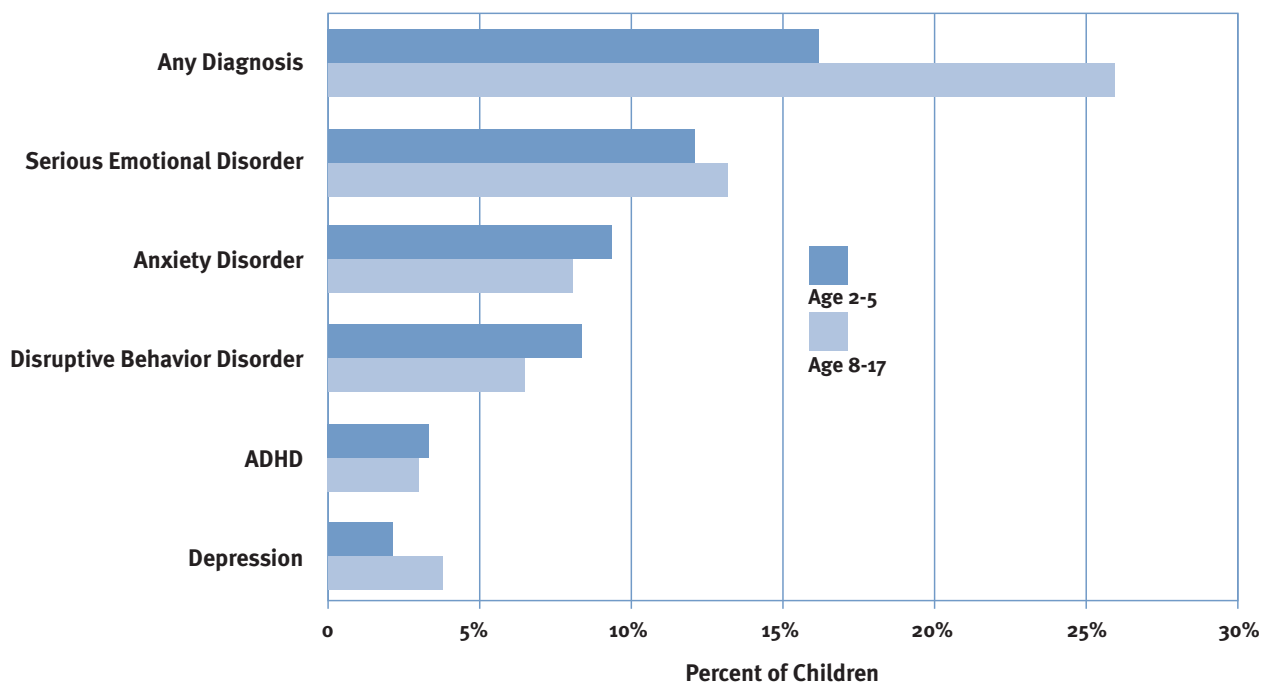
fearfulness, for example, is more likely to develop anxiety or depression than a child without that predisposition, but particularly in the context of harsh, inconsistent caregiving (perhaps owing to the stresses of deep poverty, poor quality child care, or a depressed mother) rather than nurturing, sensitive care.

This nature-nurture interaction is illustrated in studies of behavioral inhibition, an early-emerging pattern of fearful, withdrawn behavior that is a risk factor for later anxiety problems.^{10,36} In a recent report, behavioral inhibition at age 7 was related to the interaction of two influences: (a) a gene that is associated with anxiety and fear in adults, and (b) the mother's report that she lacked social support from others, which is likely to be associated with stress for her children. In other words, the interaction of a genetic tendency toward anxiety along with the experience of life stress best predicted which children would remain behaviorally inhibited at age 7.^{37,38} Such behavioral inhibition may

be related to the development of more serious problems later in life, as other studies show that children who are behaviorally inhibited show different activation of brain regions related to emotional withdrawal and fear than children whose behavior is more typical.^{39,40,41,42}

The behaviors and characteristics associated with mental health problems in the earliest years of life are often different from those seen in older children and adults with psychological difficulties.^{43,44,45} Young children's brains are not fully developed and they do not respond to stressful events the way adults do. A toddler who is coping with trauma or the loss of a loved one acts differently from a traumatized adolescent because of the different psychological capabilities, emotional needs, and social experiences at each age. Young children manifest the symptoms of depression or post-traumatic stress disorder (PTSD) differently from young adults. Some mental health problems, such as attachment-

Mental Health Problems Can Occur Across Childhood



Source: Egger & Angold (2006)⁴

related disorders (i.e., profound disturbances in close relationships with caregivers), are specific to early childhood. Thus, although adult diagnostic approaches can provide some guidance for understanding the kinds of problems that younger children may experience, new approaches to assessment and diagnosis based on the unique developmental needs and characteristics of young children are also necessary.^{45,46}

Over the past few years, researchers have validated diagnostic criteria specific to young children that are useful in identifying early

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forms of depression, post-traumatic stress disorder, autism, disruptive behavior disorders, anxiety disorders, and attention deficit/hyperactivity disorder.^{4,47,48,49,50,51,52,53} Despite these gains, however, the accurate identification of serious mental health disorders during the first three to four years of life remains a challenging task. As with older children and adults, it is unwise to assume that early problems can be classified simply into one category within a diagnostic system. In fact, young children, like older children and adults, frequently experience multiple problems (known as “co-morbidity”), as illustrated by the co-occurrence of depression with oppositional-defiant disorders in early childhood or the increased prevalence of depression or anxious emotional problems in children with autism.^{4,54,55,56}

If young children are not provided appropriate help, emotional difficulties that emerge early in life can become more serious disorders over time.^{57,58,59} Early prevention strategies and efforts to identify and treat emergent mental health problems are likely to be more psychologically beneficial and cost-effective than trying to treat emotional difficulties after they become more serious at a later age. This field urgently needs treatment strategies that are age-appropriate, support the development of healthy relationships, and are consistent with scientific knowledge about early psychological development.

Promising approaches for some early mental health challenges are well-described,^{60,61,62} yet they are not widely available. Other problems have been less well-studied in very young children. Nevertheless, many disorders can be prevented before they begin through developmentally appropriate, high-quality early care and education, systems of support that assist parents and caregivers to provide warm and secure relationships and detect emotional problems before they become more resistant to change, and public policies that help to ameliorate the physical, social, and economic conditions that cause some families to struggle.

Some individuals demonstrate remarkable resilience in the face of early, persistent maltreatment, trauma, and emotional harm, but there are limits to the capacity of young children to recover psychologically from such adversity.^{63,64,65,66} Even under circumstances in which children have been rescued from traumatizing circumstances and placed in exceptionally nurturing homes, developmental improvements are often accompanied by continuing problems in self-regulation, emotional adaptability, relating to others, and self-understanding. There also is evidence to suggest that long-term physical health can be affected by early life adversity in the form of increased risk of heart disease, diabetes, hypertension, and other physical ailments, as stressful experiences can literally be “built” into the body and the brain.⁹ Generally speaking, when children overcome these burdens, they have been the beneficiaries of exceptional efforts on the part of supportive adults. These findings underscore the importance of prevention and timely intervention in circumstances that put young children at serious psychological risk.

Serious developmental disabilities can also be associated with significant mental health impairments that are affected by experience and amenable to intervention. Neuro-developmental disorders, such as autism, fragile X syndrome, and Down syndrome, for example, are the result of strong genetic influences. Nevertheless, genetics is only part of the story. Although disorders such as Down syndrome have a strong genetic etiology, mental health outcomes for these children are also affected by the quality of care and support they receive. The possibility of significant improvement in quality of life, as well as in

both cognitive and social functioning, as a result of prompt intervention provides a strong argument for the early detection and treatment of these developmental disorders. This is becoming increasingly apparent with respect to early intervention for autism.⁶⁷

The powerful influences of early relationships illustrate how much the emotional well-being of young children is directly tied to the emotional functioning of their caregivers and the families in which they live.⁶⁸ When these relationships are abusive, threatening, chronically neglectful, or otherwise psychologically harmful, they are a potent risk factor for the development of early mental health problems. In contrast, when these relationships are reliably warm, responsive, and supportive, they can actually buffer young children from the adverse effects of other stressors.^{19,63,69,70,71} It is essential to treat young children's mental health problems within the context of their family, home, and community environments. Stated simply, addressing the stressors affecting a child requires addressing the stressors on his or her family in order to ensure that the critical environment of relationships can be maximally supportive.

For many providers of child health services and early care and education who are faced with children who present problematic behavior, the question of “when to worry” is paramount, yet little evidence exists to answer that question definitively. Although early mental health problems can foreshadow enduring disorders, many difficulties are transient and disappear with appropriate management and further maturation.^{12,13,14} Generally speaking, clinical experts

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advise greater concern when children exhibit constellations of problems (e.g., persistent irritability, eating and sleeping problems, combined with defiance) that lead to significant impairments (especially in age-appropriate behavioral skills and relationships). Nevertheless, in the absence of more extensive evidence on the natural history of many mental health disorders, the “when to worry” problem remains a challenge.

Popular Misrepresentations of Science

AS THE PUBLIC DEVOTES MORE ATTENTION TO the relation between early brain development and the emotional well-being of young children, the risk of misinformation and misleading or irresponsible messages also grows. Within this context, it is essential that we distinguish scientific fact from erroneous fiction. The following two misconceptions are particularly important to set straight.

Contrary to popular belief, young children can and do experience serious emotional problems that are comparable in severity to what we observe in older children and adults, and can have lasting effects. Although young children are not as psychologically sophisticated as adults, research on early childhood development shows that they are capable of experiencing peaks of joy and elation as well as depths of grief, sadness, hopelessness, intense anger, and rage. Contrary to traditional views, highly negative emotional

experiences in early childhood are not “forgotten” — they are built into the architecture of the developing brain and can have a sustained impact that extends well into the adult years, especially when they are severe, persistent, and uncontrollable. Aversive family and community environments can have a similarly enduring emotional impact on young children when they are experienced as toxic stress and not buffered by supportive relationships.

Contrary to popular belief, young children living in highly disadvantaged environments can be protected from serious emotional or behavioral consequences. Although such conditions increase their risk for serious mental health problems, learning impairments, and long-term physical illnesses, children who experience serious threats to their psychological health, such as those who are physically abused, chronically neglected, or emotionally traumatized, do not

inevitably develop significant mental illnesses. These children can be protected through the early identification of their emotional needs and the provision of appropriate assistance in

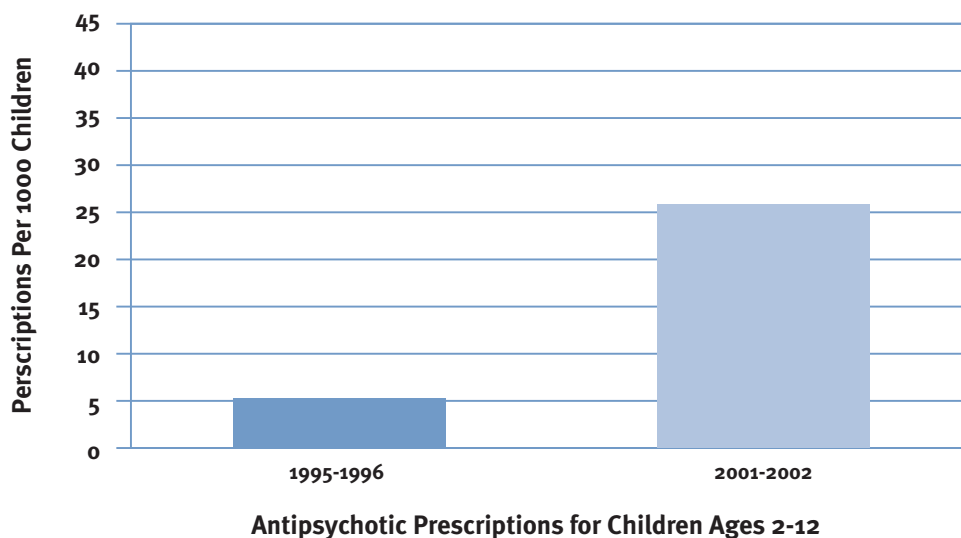
the context of stable, nurturing relationships with supportive and skilled caregivers as well as through preventive mental health services.^{64,66,72}

The Science-Policy Gap

THE FACT THAT YOUNG CHILDREN CAN PRESENT challenging behaviors is hardly news to the adults who care for them. It is less well known that some serious behavior problems in the early years of life may be the first signs of potentially lifelong disorders that are preventable if treated at a young age. Very young children can experience significant impairments in their mental health that are embedded in the architecture of their brains and may have life-long consequences, according to a rich and growing science base. Yet little attention has been paid to the development and implementation of strategies to identify children who are at risk for such problems and provide supports for them and their families that will increase the probability of more favorable outcomes. This gap between what we know and what we do is illustrated by the following three examples.

Professionals who are regularly involved in the lives of infants, toddlers, and preschoolers often lack the knowledge and skills that would help them identify the early signs of mental health problems as well as fully understand the consequences of family difficulties and parent mental health problems for young children’s development. These professionals include child care providers and preschool teachers (who are often the first people outside the family to identify a child who has serious emotional difficulties), physicians and other health care providers (who often lack a sophisticated understanding of psychological development and early mental health), paraprofessional home visitors, program administrators and personnel in social service, child protection, early intervention, and welfare agencies, and others who regularly serve families with young children.

Antipsychotic Prescriptions for Children Have Increased Five-Fold



Source: Cooper et al. (2006)⁸¹

In most communities, mental health services for young children and their families are often limited, of uneven quality, and difficult to access, and there are few well-trained professionals with expertise in early childhood mental health. Central to this problem is the need to close the gap between the numbers of young children exhibiting emotional difficulties and/or problematic behavior that cannot be managed adequately by their parents and the number of personnel who are skilled in effective intervention approaches that are uniquely suited to this group.

There has been a dramatic increase in the use of psychoactive drugs for young children with behavioral or mental health problems, despite the fact that neither the efficacy nor safety of many of these medications has been studied specifically in children at these early ages.⁴⁷ A recent report from the National Survey of Children's Health, for example, reported that children age 4-8 were more likely to be taking medication for attention deficit/hyperactivity disorder than older children and adolescents.⁷³ Of even greater concern, some studies have reported increasing numbers of prescriptions for stimulant medications and antidepressants to treat children as

young as age three.⁷⁴ In most cases, these medications for young children are prescribed “off label,” which means that they have only been approved for treating adults and that there are no scientific data on their immediate or long-term effects on child behavior or early brain development.⁴⁷ Until the relevant clinical studies have been completed with the appropriate

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populations of young children, the use of such medications must be viewed as experimental and their safety and effectiveness unknown.^{75,76,77,78}

Implications for Policy and Programs

THE SCIENCE OF EARLY CHILDHOOD DEVELOPMENT, including knowledge about the extent to which serious emotional problems are embedded in the architecture of the developing brain, is sufficiently mature to support a number of evidence-based implications for those who develop and implement policies that affect the health and well-being of young children. Both public and private actions can prevent the kinds of adverse circumstances that are capable of derailing healthy development, as well as increase the likelihood that effective supports and appropriate therapeutic interventions (where needed) will reduce the long-term consequences of early threats to a child's mental health. The following points are particularly worthy of thoughtful consideration.

Because young children's emotional well-being is tied so closely to the emotional status of their parents and non-family caregivers, the emotion-

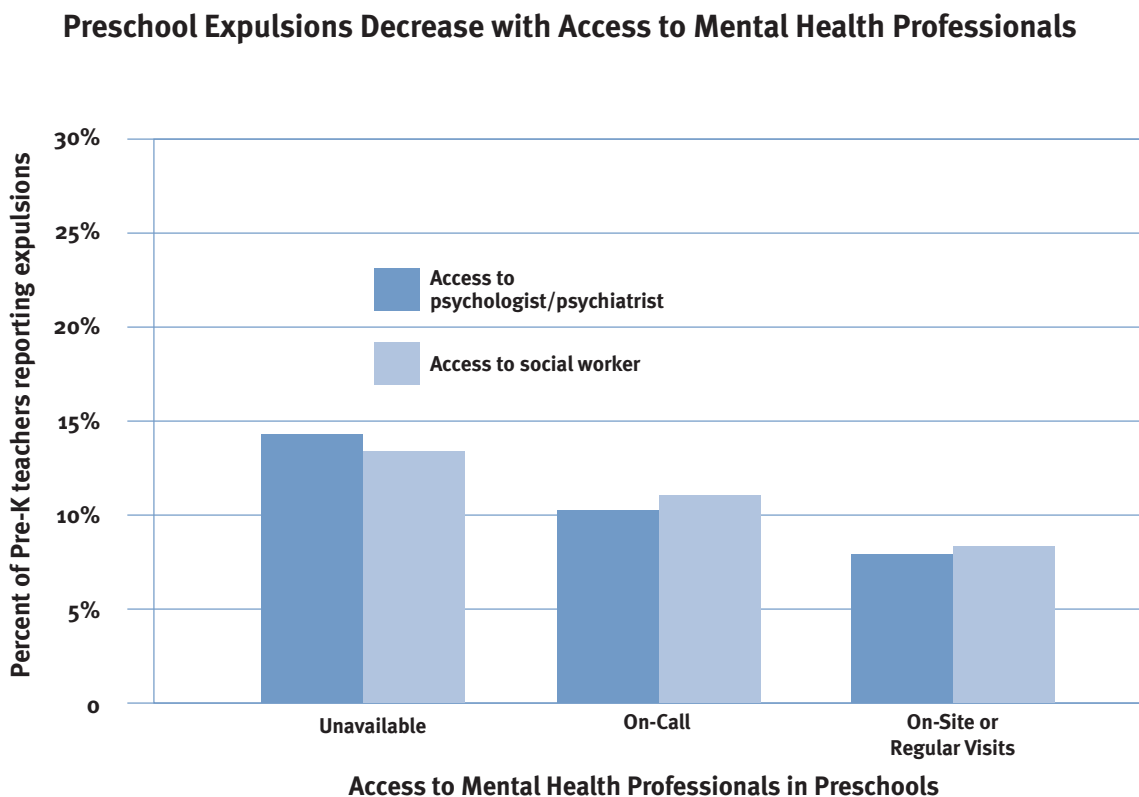
al and behavioral needs of infants, toddlers, and preschoolers are best met through coordinated services that focus on their full environment of relationships. Multigenerational, family-centered approaches offer the most promising models for preventing and treating mental health problems in young children. These strategies range from providing information and support to address problematic child behavior to initiating therapeutic interventions to address significant parent mental health or substance abuse problems, end domestic violence, or help families to cope with the burdens of persistent poverty. Indeed, sometimes the best intervention strategy for young children with serious behavioral or emotional problems is to focus directly on the primary needs of those who care for them. However, most funding approaches to mental health services are client-specific rather than family-focused, and most programs aimed at such “adult” problems as poverty, domestic

violence, or substance abuse do not take into consideration the emotional well-being of the children affected by them. More flexible approaches to funding family-based preventive and therapeutic mental health services are needed.

Therapeutic help for a young child with emotional or behavioral problems can be provided through a combination of home- and center-based services involving parents, extended family members, home visitors, providers of early care and education, and/or mental health professionals. The settings, partnerships, and targets of therapeutic assistance for young children with mental health needs are much more diverse than those for adults because their emotional well-being is linked tightly to the quality of their relationships with the important people in their lives. Effective intervention often requires the coordination of services from multiple

sources that do not relate easily. These might include early care and education, social service and welfare departments, health care, schools, child welfare agencies, and early intervention programs, to name a few. Reducing barriers to greater coordination often requires attention to a tangle of administrative obstacles. One example would be a change in reimbursement regulations to allow “mental health funds” to be used to pay for specialized child care for a youngster with emotional and behavioral problems, rather than restricting the funds to only “mental health programs.”

Mental health services for adults who are parents of young children would have broader impact if they routinely included attention to the needs of the children as well. Because of the close association between young children’s emotional well-being and the emotional health and functioning of their caregivers,⁷⁹ therapeutic assistance to



Source: Gilliam (2005)³

a parent ought to include an automatic assessment of any young children in the family to see how they are experiencing the emotional consequences of their parent's problems. For example, any physician treating a depressed mother ought to understand the consequences of that diagnosis for her young children and therefore assure that they receive careful examinations and appropriate intervention as needed.

Physicians and providers of early care and education would be better equipped to understand and manage the behavioral problems of young children if they had more appropriate professional training in this area and easier access to child mental health professionals when they are needed. Caregivers, teachers, and physicians are often the first to recognize serious emotional difficulties in a child who is in their care, and on-site assistance from early childhood mental health specialists can be particularly helpful in providing guidance about how best to respond to the needs of the children, their parents, and providers of early care and education. Preschool teachers with access to mental health consultation, for example, are less likely to expel children with behavioral problems from their programs.⁸⁰ Some states have made progress in providing funds for early childhood mental health consultations in early child-care settings, often through the coordination of diverse funding streams. Broader attention to early childhood mental health requires attention to the quality of out-of-home care that children typically experience in the early years.

A better coordinated infrastructure for funding mental health services for young children could provide a more stable and efficient vehicle for assuring access to effective prevention and treatment programs. Consistent with both the science—physiological interrelations among the physical health, safety, and emotional well-being of young children—and recent federal legislation regarding parity for coverage of health care for both physical and mental health impairments, funding for early childhood mental health services could be integrated more effectively into a wide range of existing health programs. Examples include Early and Periodic Screening, Diagnosis and Treatment (EPSDT) services under the Medicaid program, the State Children's Health Insurance Programs

(S-CHIP), early intervention services under Part C of the Individuals With Disabilities Education Act (IDEA), child welfare programs, and maternal and child health initiatives.

Cultural differences in attitudes and beliefs about behavior and mental health require sensitivity and respect for diversity as well as specialized intervention skills. The mental health needs of young children in families from different cultural and ethnic groups would benefit considerably from enhanced practitioner training and flexible service models that incorporate greater

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content representing a broad variety of cultures. Differences are widespread across a variety of domains that affect approaches to the sensitive issues of emotional well-being and mental health in the early childhood years. These include how children are taught to interpret and express their experiences of fear, anger, and shame; parents' attitudes toward discipline; the relative reinforcement given to individual achievement versus interdependent behavior; attitudes about mental health and mental illness; and acceptance of therapeutic intervention for very young children by non-family members; among many other concerns. The shifting demographics of the early childhood population in the United States make this a particularly compelling priority for future planning. Finally, the effects of cultural assimilation for immigrant groups across generations underscore the importance of understanding individual differences within cultural groups as well as continuous changes in cultural beliefs and practices over time.

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