Research on Child and Adolescent Mental Health: NIMH's Blueprint for Change

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Ten percent of children and adolescents in the United States today have mental illness severe enough to cause major functional impairment in some aspect of their lives.[1:1] These children are more likely to drop out of school, engage in high-risk sexual behavior, and have substance abuse problems as well as lifelong health problems and social problems.[1:1]

What We Know

Research on child and adolescent mental health has progressed tremendously in the past decade. For example, we now know that multiple genetic and environmental factors interact before and after birth to shape brain development and subsequent behavior. Studies of caregiving show that situations of abuse and neglect may affect brain cell survival, neuron density, and neurochemical aspects of brain development—as well as the way people react to stress in childhood and later life.[1-8]

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Researchers in basic behavioral science have increased our understanding of contextual influences on development of personality and behavioral traits. For example, we are learning why gender differences in depression begin to appear during adolescence. The work of Nolen-Hoeksema, Larson, and Grayson[9] showed that gender-related effects are mediated by child care, social factors (eg, sexual abuse, low income, inequity in distribution of work), and personality factors (eg, lower levels of mastery and a greater tendency to ruminate when depressed). After these variables are controlled, gender differences become minimal. This mediation suggests that depression is more prevalent in adolescent girls because of factors that socialize them to be more emotionally expressive and to adopt internalizing coping strategies. By better understanding how parents influence girls' perception of emotional mastery and self-evaluation, we can develop interventions that decrease vulnerability to depressive symptoms.

Another area of study, sleep regulation, has documented the serious emotional and behavioral health consequences of insufficient sleep among adolescents.[10] During pubertal maturation—when physiologic need for sleep increases—many adolescents sleep less than necessary, even on school nights. This sleep deprivation results from late bedtimes combined with early school start times.[11] Although the short- and long-term consequences of insufficient sleep are not fully established, early research indicates negatively affected school performance and mood as well as impaired self-regulatory abilities.[10] Sleep deprivation leads to irritability, poor concentration, and emotional lability.[10] The most important observation is that sleep deprivation, mood disturbance, impaired concentration, and diminished self-regulatory skills can lead to more severe symptoms of impaired functioning at school and in social situations.[10]

In the past decade, researchers have increasingly turned their attention to evidence-based treatment of children and adolescents with mental disorders. At least two dozen specific psychosocial interventions have been identified as efficacious for conditions such as attention deficit and hyperactivity disorder (ADHD), anxiety, oppositional-defiant disorder, conduct disorder, and depression.[12,13] Empirically validated interventions include intensive case management, therapeutic foster care, and home-based forms of therapy (especially multisystemic forms of therapy and models of home visitation by nurses).[14,15]

Advances in drug therapy have resulted in successful approaches for treating ADHD, obsessive-compulsive disorder (OCD), and childhood anxiety. Major studies are underway to test benefits of psychotherapy, drug therapy, and combined treatment for adolescents with major depression, ADHD, and OCD. Other clinical trials are studying children with bipolar disorder, autism, and other major mental disorders.[1:3]

Research has identified some treatments that are potentially ineffective and some that appear harmful. For example, some forms of institutional care do not


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provide lasting results after the child returns to the community. "Boot camps" and residential services provided to delinquent juveniles are largely ineffective. Behavioral problems may actually increase in high-risk adolescents involved in peer-group-based interventions.[1:3]

What We Need to Know

But many important issues remain unresolved. Joined by a group of scientists from around the United States as well as staff from the National Institute of Mental Health (NIMH), we recently reviewed our progress and greatest challenges in child and adolescent mental health research.[1] Our report (available at www.nimh.nih.gov/child/blueprint.cfm) is intended to serve as a research blueprint for the next decade. The report acknowledges a considerable gap between currently available information and the scientific knowledge we urgently need to address the needs of children with mental disorders. Our review clearly establishes that childhood mental disorders exact a tremendous toll on children and on the nation as a whole. Moreover, compelling evidence indicates that by 2020, childhood neuropsychiatric disorders will rise by more than 50% internationally to become one of the five most common causes of morbidity, mortality, and disability among children.[1]

Recommendations in the NIMH report highlight gaps in our current knowledge in neuroscience, behavioral science, prevention methods, psychosocial interventions, psychopharmacology, and combined interventions and services. The clinical knowledge derived from this research can—and should—be the basis for delivering effective clinical services to children and adolescents seen at Kaiser Permanente. Specifically, we need new emphasis on prevention and effectiveness trials, prevention services, and cost-effective preventive strategies. Treatment outcome studies should focus on more than symptom reduction; instead, interventions should also be designed to improve performance at school, family interactions, and other social interactions.

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We must also change the way we approach outcome studies: We must move from our current laboratory-based mindset to a practical approach that can be implemented by clinicians. Scientists must develop and adapt psychosocial treatment for use in real settings, such as schools and primary care facilities. Rates of one or more comorbid Axis I psychiatric disorders among children with ADHD range from 15% to as much as 75%.[16] However, published randomized controlled trials (RCTs) of stimulant drugs include only children with "pure" ADHD and thus dilute (or perhaps eliminate) applicability of trial results to clinical practice.[1:56] In general, research-level precision in pediatric and adolescent assessment and rigid adherence to treatment protocols may be impossible in a busy clinical setting.

More psychosocial treatment programs should target potentially life-threatening conditions, such as suicide and eating disorders. Much more research is needed on relatively understudied conditions, such as bipolar disorder, autism, neglect, physical and sexual abuse, and early-onset schizophrenia. We need to better understand comorbidity, especially medical and psychiatric disorders; substance abuse and depression; and anxiety and depression. We must more fully examine parental mental illness, including its impact on preventing and treating disorders in children.

Increased research is needed on managing serious mental illness with psychopharmacology. At present, three fourths of all drugs approved by the US Food and Drug Administration (FDA) for adult use have not been approved for use in children and thus are prescribed "off label" when used in pediatric medicine.[17] Disorder-based efficacy trials of medications under patent protection are now being conducted to determine their appropriate use in treating acute medical conditions. However, researchers must examine the long-term safety and effectiveness of such drugs. In addition, the medical community greatly needs studies that examine reasons why patients do not follow treatment recommendations.[1:15]

In the near future, delivery of care will move from clinic-based models toward patient-centered family care delivered in out-of-office settings, such as home, school, and the Internet.[1,18] Researchers must study the possi-

bility and benefits of providing services that include nontraditional methods—ie, methods that use new technology and other innovative means—to reach out to children and adolescents along with their parents, caregivers, and teachers.

The Cost of Inaction

In 1998, US expenditures on children in specialty mental health and general health sectors totaled $11.75 billion—about $173 per child.[1:34] This expense increased nearly threefold from 1986, when expenditures totaled about $3.5 billion (not accounting for inflation).[1:34] Approximately 4.3% of children received psychotropic medication, use of which was greatest in older children (5% of children aged 6-11 years; 5.6% of adolescents; 0.7% of children aged 1-5 years).[1:35] The United States spent an estimated $1.1 billion on psychotropic medications for children in 1998.[1:35] The National Advisory Mental Health Council report revealed that the rate of outpatient mental health services has increased since the 1980s; however, only 5% to 7% of children receive some specialty mental health services in contrast with the estimated 20% of children who have a diagnosable mental disorder.[1:34]

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Stigma continues to be a major barrier to obtaining mental health treatment for children and adolescents. Scientifically based treatment does exist but may not be very effective in real-world medical practice: Most treatments and services that children receive have not been evaluated outside the laboratory and may not have been studied across developmental stages of childhood and adolescence.

Inaction on this research agenda would impose an enormous cost burden on children, parents, schools, and health care systems. This cost is further magnified by recognizing that the consequences of childhood disorders extend beyond childhood. Not only do mental disorders diminish quality of life for children during their early years, but these disorders also extract an enormous toll on productivity later in life. These burdens may also be carried forward from one generation to the next. With this potential effect in mind, we urge clinicians, scientists, and policymakers in Kaiser Permanente and beyond to aggressively pursue new knowledge and to seek improved practices for preventing and treating mental disorders in children and adolescents. ❖

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Growth

Mere change is not growth.
Growth is the synthesis of change and continuity,
and where there is no continuity there is no growth.
CS Lewis, 1898–1963, British theologian, writer and critic