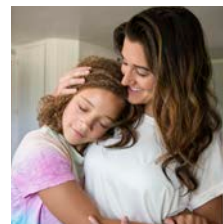




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Population Health Science Summit: Grounding Evidence and Preliminary Research Synthesis

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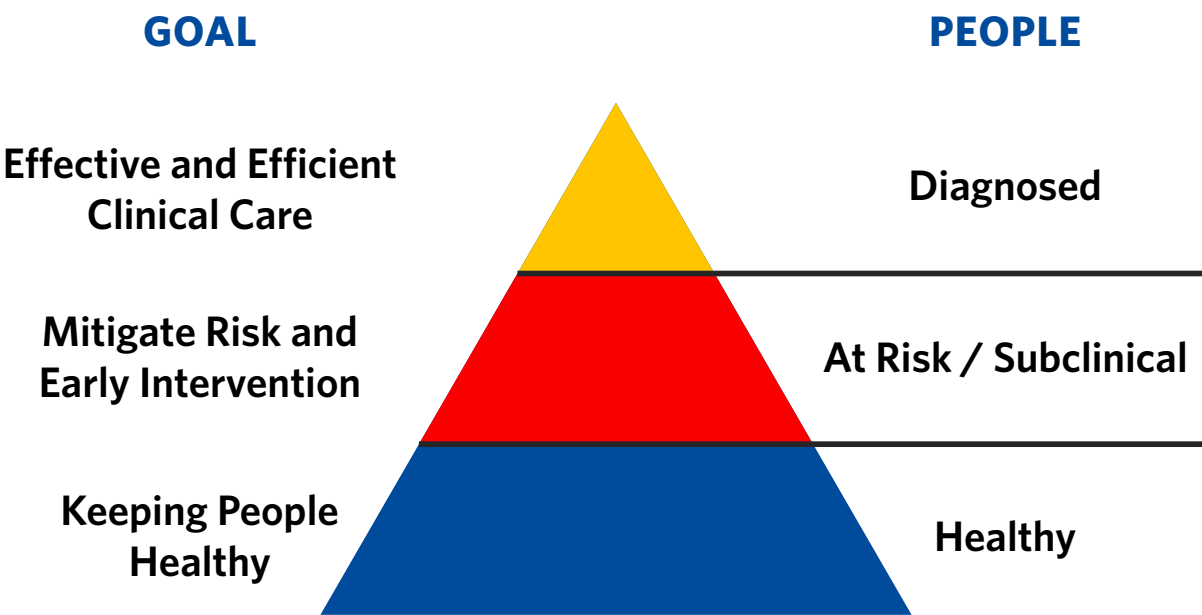
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Introduction

from Arthur C. Evans Jr., PhD and Mitchell J. Prinstein, PhD

For many decades, our nation’s approach to behavioral health has relied on an acute care model, with behavioral health systems focused primarily on those with a diagnosed conditions and interventions predominantly involving one-on-one treatment in traditional therapy settings. While this approach has helped a significant number of people, we believe that this approach must be expanded to encompass the breadth, magnitude, and level of complexity of behavioral health conditions and address the widening health disparities in the US. Moreover, we can better utilize the breadth of what psychological science has to offer to improve and promote health and wellbeing.

Over the past several years, APA and many others have been pushing for this paradigm shift around health. We believe that a broader “population health framework” better positions psychological science and services not only to help individuals with behavioral health challenges, but to promote optimal psychological health of all people. This framework builds upon decades of work and creates opportunities in terms of **who** provides and receives help, **what** our goals are, as well as **when**, **where**, and **how** we help people. This necessitates the use of multiple strategies across multiple domains (see *conceptual model below*) – from promoting mental health literacy, to enhancing professionally delivered clinical services, to shaping public policy – all of which rely on a strong foundation of science to be successful.



The following research synthesis offers a rich summary of psychological science underlying numerous strategies that support a population health framework. This synthesis also highlights gaps in the research that must be filled if we are to expand our paradigm for addressing behavioral health and create a psychologically healthy nation. We hope that this information not only enables a deeper understanding of population health, but provides a foundation for people – those working in behavioral health, policy, and beyond – to contribute to the collective action that is required to elevate the psychological health of all individuals, families and communities.

CHAPTER 1

Moving Toward a Population Health Approach

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BOTTOM LINE

- In spite of the creation and implementation of evidence-based programs (EBPs), the population level of children's mental health and well-being in the United States remains unacceptably poor, is characterized by huge disparities across groups, and represents a global mental health crisis.
- Psychologists are well-positioned to contribute to population mental health and overall health for children.
- In order to improve population mental health and eliminate disparities, challenges must be overcome in bottom-up scaling of EBPs, top-down design of population-level interventions, and creation of a primary care system for children's mental health.

Every day, we hear of a new school shooting, teen suicide, or drug overdose and are reminded of today's crisis in children's mental health. The stress of the COVID pandemic exacerbated what was already a challenge to stem the growing despair in today's young population. The firearms death rate (mostly assault or suicide) among children under age 19 more than doubled over the past decade and in 2020 became the leading cause of death in young people, ahead of automobile accidents and cancer (Panchal, 2022). The likelihood that a child will experience a diagnosable mental health disorder by age 18 has grown to 49.5% (U.S. DHHS, National Institute of Mental Health, 2021). Fewer than 5% of these children will receive professional treatment, let alone an evidence-based program (EBP) (Hooley et al., 2023). The status quo of mental health treatment for young people is not succeeding.

The growing crisis in children's mental health coincides with a growing crisis in their physical health. The American infant mortality rate is 76% higher than the industrialized-world average (Thakrar, Forrest, Maltenfort, & Forrest, 2018) and ranks fourth from the bottom among all OECD (Organisation for Economic Cooperation and Development) nations. Race disparities are even more worrisome: The 2019 infant mortality rate was 10.6 per 1,000 for Black children and 4.5 per 1,000 for non-Hispanic White children (Ely & Driscoll, 2021). Similarly woeful statistics can be cited for older children's health (e.g., obesity and other conditions) and delivery of health care. Much of this mortality can be prevented through parental home visiting, education, and other behavioral health interventions (Dodge et al., 2022).

In spite of the laudable efforts of psychological scientists to create evidence-based interventions and the tireless work of psychological professionals to implement these programs,

we have not moved the needle on improving the population mental health (and overall health) and well-being of our nation's children. A decade ago, Kazdin and Blasé (2011, p. 21) declared, "Despite advances, mental health professionals are not likely to reduce the prevalence, incidence, and burden of mental illness without a major shift in intervention research and clinical practice." Their statement is even more germane today. The goal and metric of accountability for psychological scientists and practitioners must change to a universal public health approach.

This reframing is a necessary next step for research and practice in psychology. The challenge is to move beyond the delivery of sound psychotherapies to a small number of self-selected children and toward a universal mandate to address a population crisis. Although daunting, this reframing affords new conceptual models, innovative interventions, renewed focus on prevention, and additional resources to solve a systems problem. Instead of starting with the hammer of individual therapy, the transformation is to start with the population problem and work backwards to solve it at a universal level in whatever way is effective and cost beneficial.

Psychological scientists have begun to model three approaches to population mental health that could be emulated by the field: bottom-up scaling, top-down community-level interventions, and systems transformation.

Bottom-Up Scaling of Evidence-Based Intervention

The scientific field is replete with theoretically based interventions that have been applied to individual children and families and shown through rigorous trials to be effective in relieving or preventing mental health disorders among

the small selective groups to which they have been applied. Successes have been reported, for example, for treatment of children's depression through cognitive behavior therapy (Cuijpers et al., 2020; Eckstain et al., 2020), child conduct problems through parent management training (Kazdin, 2017), social incompetence through social-cognitive skill training (Dodge et al., 2015), and anxiety and phobia through cognitive therapy (Davis, May, & Whiting, 2011). Evidence is also being accumulated for prevention of these disorders (Garber, 2022). The first, obvious, strategy in moving to population impact is to scale these interventions to the full population.

As will be noted later in this report, mixed success has been reported when these interventions are scaled up in community settings. A 30-year-old Institute of Medicine model (Mrzcek & Haggerty, 1994) assumed the direction of influence moves from laboratory science to small university-based randomized trials to community implementation, but this model has largely failed. Welsh, Sullivan, and Olds (2010) used the term "scale-up penalty" to describe the decrement in impact that typically occurs when a small evidence-based program (EBP) is disseminated to a large population. Problems must be overcome in several domains in order to scale up successfully.

POPULATION REACH AND FIT

The reach of a scaling effort can be indexed as the proportion of the target population that receives a needed intervention. Typically, fewer than 5% of children who merit mental health services receive them. In 2010, the Los Angeles County Department of Mental Health pulled together local and state funding to initiate a systematic effort to scale up coverage of EBPs for children. Hooley et al. (2023) reported modest success over the past decade, with the most recent measure reaching 17% of the target population. Bidas et al. (2019) reported findings from an at-scale effort in Philadelphia to train clinicians to employ EBPs instead of nonvalidated interventions; they found an increase in the reported use of EBPs by 6%. Although impressive growth in both of these communities, the reach must be far greater before population impact can be achieved.

One problem highlighted by Hooley et al. (2023) is the stark inequities evident when scaling in Los Angeles. Racial and ethnic minorities, families born outside the United States, families without an automobile, and families with lower education all were under-represented in scaled-up services. On the provider side, having more therapists who speak a language

other than English and willingness to conduct therapy sessions outside the office (e.g., school, in home) increase reach. Part of the problem with inequities in population reach is the lack of fit between the therapy itself and the population served. Talk therapies that assume a middle-class culture and values may not be taken up by diverse subpopulations that have particular needs and are skeptical of institutional power. A task for intervention designers is to adapt EBPs to diverse groups and to gain support from diverse communities.

QUALITY CONTROL

Beyond reaching the full population, successful scaling requires maintenance of fidelity to the intervention's manualized protocol. Dodge (2018) has articulated factors that often reduce fidelity when scaling, including poor-quality supervision, large caseloads, lack of monitoring of performance, and few incentives for high quality. Jordans and Kohrt (2020) provide a review of practices that are likely to enhance population reach, including relevance of the therapy to the population, cultural fit, and feasibility.

Sometimes adaptations in the intervention protocol when disseminating to a new population are necessary to meet the needs and culture of the new population. One challenge in quality control is balancing the appropriate need to adapt an EBP to a new cultural group with adherence to the original protocol. Some necessary changes to achieve penetration with a new population may be trivial to the behavior change process and unlikely to affect impact, some cultural adaptations might improve impact, and yet other well-intentioned changes could reduce efficacy. Intervention designers must clarify essential elements of therapies that cannot be breached, and more clinical research must be directed toward empirical testing of the impact of modifications to an intervention during scaling with new populations.

ATTENTION TO THE POPULATION AND CONTEXTS OF INTEREST

Rather than designing interventions that will ultimately have limited utility, Weisz et al. (2015) suggest that to shrink the gap between large university- and laboratory-based effect sizes and small real-world impact, psychologists must make a major shift toward creating and testing their interventions in real-world settings at large scale from the very beginning. Beidas, Saldana, and Shelton (2023) suggest that testing interventions should be done in the contexts in which they are meant to be delivered. Intervention designers must resist the urge to craft very expensive interventions that could never be deployed at scale.

The Fast Track intervention (CPPRG, 1992) provides a case in point. Directed toward preventing chronic violence and antisocial behavior in high-risk first-grade children, this multifaceted intervention package combined parent management training, social-cognitive skills training, academic tutoring, classroom curricula, and mentoring delivered over a 10-year period at a total per-child cost of about \$58,000. A randomized controlled trial demonstrated the intervention's efficacy in reducing adult externalizing psychopathology by about 20%. Given the extremely high cost to society of chronically antisocial individuals (over \$2 million per case; Cohen, 2020), a cursory benefit-cost analysis indicates a positive rate of return on this investment; however, the implementation cost (\$58,000 per child) is simply higher than most communities are willing or able to bear. The study made a major contribution to public discourse by demonstrating that these high-risk children are not destined to become "super-predators," and to the science of developmental psychopathology by showing they can be deflected from dangerous life course trajectories, but the intervention program is not being disseminated at a high rate due to its high cost. Future interventions must attend not only to the cultural context of the target population but also to the public context of funding and sustained support.

Top-Down Design

One exciting consequence of a shift to population metrics is that it opens new avenues for intervention that would be too expensive or time-consuming if applied only to an individual child. A bio-ecological model of child psychopathology recognizes the impact of not only the individual child and parent but also the microsystem of the school and neighborhood, the exosystem of government service agencies, and the

macrosystem of cultural attitudes and norms (Bronfenbrenner & Ceci, 1994). This conceptualization suggests the potential power of community interventions, capacity-building, and public policies.

COMMUNITY AND SETTING INTERVENTIONS

A psychotherapist helping a family of a young child displaying conduct problems in preschool is resigned to accept the community status quo. They must cope with the community cultural and economic context that might include an employer who is unwilling to allow the parent to visit the preschool during the day, a childcare market with limited high-quality opportunities at affordable cost, racist gatekeepers who steer disadvantaged families away from the best programs, and a culture that assumes boys from diverse neurodevelopmental or cultural backgrounds are incapable of self-control. A therapist might find oneself teaching parents skills to cope with a broken community, how to be first in line for the best child programs that have limited availability, and how to become comfortable with inadequate resources. In contrast, the community change agent can contemplate interventions that alter the context that families will face, making parents' task easier and more successful.

Some community-level interventions can be created and implemented at a modest per-child cost even if the total community cost is seemingly large. At the microsystem level, classroom curricula in social-emotional learning (SEL) and emotion regulation that improve children's enduring skills have proven promising (Conduct Problems Prevention Research Group, 2010; Webster-Stratton, Reid, & Stoolmiller, 2008). The PBIS program is a schoolwide reform in management of student discipline through positive reinforcement and resetting of the classroom culture and norms, which has been shown to reduce child behavior problems (Bradshaw, Waasdorp, & Leaf, 2012). Neighborhood-level interventions such as increasing green spaces may lower stress and improve child mental health (Vanaken & Danckaerts, 2018). Television and the internet afford delivery of entertaining interventions such as *Sesame Street* (Murphy, 1991) and *Blue's Clues* (Mousavian, Amini, & Moazzez, 2014). At the exosystem level, government agencies could make service application forms easier to complete for families, make services more accessible to low-income families by locating them in housing projects or schools, and employ more culturally competent service providers (Jordans & Kohrt, 2020). At the macrosystem level, public service announcements (PSAs) and social media could be mounted to change attitudes about mental health and

reduce stigma associated with seeking services (Palmgreen et al., 2001).

These interventions should be predicated on sound psychological theory, piloted iteratively, and tested through rigorous means such as community-level randomized trials. Numerous successful examples have been offered and need to be scaled.

Resource and capacity building

The capacity of the community to provide EBPs for treatment and prevention must be dramatically improved. Allocations must increase to provide professional services at scale. The compensation levels for service providers (e.g., childcare workers, intervention staff) must be increased to attract and retain high-quality professionals. Cross-training and training of lay providers (following rigorous evaluation of efficacy) could expand the reach of programs. Embedding services in institutions that are readily accessed by families (such as schools, churches, and neighborhood centers) could increase usage.

One exciting trend is building capacity within pediatric health care to bring psychological expertise to address children's mental and physical health. The HealthySteps program (Valado et al., 2019) is an evidence-based example of resourcing pediatric practices with psychologically trained specialists who screen for risk, deliver brief interventions, and refer families to community-based psychological interventions. The well-known ongoing battle to bring parity to insurance reimbursement for mental health interventions (Pestaina, 2022) must be accompanied by an effort to bring adequate reimbursement for screening and delivery of psychological interventions to address children's physical health.

The multilevel ecological model suggests resources and capacity to improve the community context in which children are raised must also increase. Public schools could be funded at higher levels to allow support services such as social workers and nurses. High-quality grocery stores could be financially supported and located in food deserts so young children could have improved nutrition.

The case for increased resources and capacity must be made through economic analyses and empirical inquiry. The university and public service infrastructures must collaborate to evaluate the feasibility and impact of increased resource allocation. Plenty of natural experiments in resource allocation could be mounted and scrutinized through such collaboration. For example, demonstration programs that are

implemented in selected sites could be allocated randomly through community lotteries, and programs could be rolled out through planned randomization (e.g., stepped-wedge designs) so that they can be evaluated rigorously.

Public policies

Public policies must be accountable to dual goals of population child mental health and elimination of disparities in mental health (Wilkinson & Pickett, 2009). Beyond increasing funding levels, policies must be created so that children's exposure to trauma is reduced and their opportunity for growth is enhanced. Police responses to domestic violence need reform. The Child Protective Services (CPS) system needs to separate its forensic and clinical functions so that children are served and protected while investigations proceed. Corporal punishment is still allowed in some public school systems even though its deleterious effects are well documented. Work-family policy needs to become more family-friendly by not forcing employees to work unscheduled overtime. The Family Medical Leave Act (FMLA) should be expanded to reach all workers. Policies to distribute payments to families through programs such as SNAP (Supplemental Nutrition Assistance Program) could be made more effective by spreading payments more evenly so children do not go hungry at the end of each month.

Financing of services to families must be borne not only by taxpayers but by better collaboration among public, private, and philanthropic institutions. These collaborations have been forged in healthcare through shared payments by Medicaid, private health insurance, and family copays, and these examples could be enhanced in mental health and well-being programs. One example is the state of Oregon's legislatively mandated policy to finance the evidence-based Family Connects program, which provides universal nurse home visits to support parents giving birth. The statewide implementation is financed through equal shares by the federal Medicaid program, state taxpayer allocation, and private health insurance.

System Approaches

A major reason that community capacity to serve the mental health needs of children and families is so poor is that the United States has never created a universal *system* of mental health care for families. Dodge (2018) has contrasted the lack of a childhood mental health system with comparatively well-functioning systems in other sectors, such as health-

care, education, and eldercare. Those systems have several features in common. They reach universally. One need not be in need, already “sick,” or diagnosed with a disorder to receive a “check-up” or preventive services at regular intervals. A general practitioner (e.g., primary care doctor, classroom teacher) provides global advice (e.g., “wear a seat belt,” “get exercise”), screens for more serious concerns, and connects a person with specialized diagnostic and therapeutic resources tailored for the individual through a network of service agencies. The care across these specialized resources is coordinated through an electronic case record that facilitates cross-provider communication and documents the history of needs and services. In contrast, for children’s mental health, families are on their own to recognize their needs, identify services in their community, and figure out how to access those services.

The failure to create a comprehensive mental health system for children is embedded in the erroneous belief by experts across history that young children do not have mental health needs. Educators created a public school system that started at age 8 because they believed younger children could not learn. Public officials ignored early child abuse and trauma because they believed children would not remember such events and they would leave no indelible mark. Physicians spoke out against home-visiting interventions because they believed it would intrude on stay-at-home mothers’ autonomy. In a system in which families were left on their own to find support services in their community, more advantaged and well-connected families found ways to get their needs met anyway, disadvantaged families were left out, and group disparities in needs and services abounded.

Only over the past several decades have child development scientists identified the lasting impact of adverse child events (ACEs) on mental health and well-being through longitudinal inquiry and have neuroscientists documented the explosion of growth in neural synapses in the first several years of life through imaging studies. The scientific and professional worlds now better understand the critical sensitivity of young childhood experiences and the need for prevention and treatment of mental health problems in childhood.

One solution may be to integrate the delivery of mental health care with physical health care through more comprehensive reach, screening, and service provision. As noted earlier, one promising approach is to expand the services of pediatric care to attend more explicitly to children’s mental health needs through screening, early intervention, and referrals to specialists. The HealthySteps program embeds a child development specialist in the pediatric practice to respond to needs as they arise (Valado et al., 2019).

Another approach is Triple P (Positive Parenting Program), which reaches universally through a coordinated set of tiered interventions to lower the rate of conduct problems in children. Universal messages are delivered through public service announcements, single-session seminars offer concerned parents tips and strategies, brief private sessions help families with more serious needs, and referrals to professional treatment are encouraged for those in greatest need. A controlled trial in which 18 communities were randomly assigned to the Triple P program (or not) demonstrated positive impact on reducing the community-wide rate of child maltreatment after 2 years (Prinz et al., 2009). Other studies have shown associations between the presence of Triple P and reductions in child behavior disorders (Sanders et al., 2008).

Family Connects is a systems approach to supporting families at birth by attempting to reach every family giving birth in a community through one to several home visits by trained public health nurses who support the family, identify their family-specific postpartum needs, provide brief interventions and motivational interviewing, and connect them with community resources to address their needs (e.g., treatment for postpartum depression, substance abuse intervention, housing loans, and access to high-quality childcare). Implementation studies show community-wide reach can be over 80% with high fidelity, and replicated randomized controlled trials demonstrate impact on improving mothers’ mental health and reducing child abuse reports (Dodge et al., 2022). This program delivers support at one point in the life course (birth), but the concept could be expanded to deliver primary care across the child’s development.

RECOMMENDATIONS

- *Scale up evidence-based programs (EBPs).* As psychologists scale up EBPs, they must be held accountable for population-level reach, high fidelity to the EBP protocol, and attention to the cultural and public context.
- *Innovate population-level interventions.* Psychologists must create and evaluate novel population-level interventions that improve communities, school, and neighborhoods as contexts for children's healthy development. Community resources and capacity to deliver effective interventions must be improved. Public policies must be shaped to support the mental health and well-being of families and children.
- *Create a primary system of care to promote mental health and well-being of children.* A novel system of care, modeled after primary health care, should be created, implemented, and evaluated. This system should reach the full population at regular intervals across the lifespan, support families, identify mental health risks and needs, and connect families with specialized resources to address family-specific needs.

Tasks Ahead

These systems-level approaches hold the promise of a new era that can be called *primary care for children's mental health and well-being*. This era is just beginning, and numerous tasks face scientists, practitioners, and policymakers.

SCIENTIFIC CREATIVITY AND DISCOVERY

Framing the challenge as one of primary care for children's mental health opens unprecedented opportunities for innovation in schools, childcare, neighborhoods, philanthropy, and government. Because the unit of intervention is the entire community and the cost of implementation is great (even if the per-child cost is low), innovators and public institutions must collaborate in creating and piloting promising demonstrations. Encouragement of collaboration at the local level can come from collaboration between scientific and service institutions at the federal level.

RIGOROUS EVALUATION

Scientific rigor has been the hallmark of evidence-based programs, and the same rigor will be required in evaluating community-level interventions. Evaluation will be enhanced

through the creation of integrated data systems that document, monitor, and track children across agencies and development. Public school systems have led the creation of such data systems because of their mandate to monitor student academic performance. Administrative data files afford relatively inexpensive evaluation trials, if public officials are willing to allocate pilot funds for demonstrations in a manner that allows rigorous evaluation (e.g., lotteries, systematic rollout over year).

COMMUNITY ACCOUNTABILITY AND POLICY

A major driver of innovation and evaluation will be public accountability for children's mental health. Merely having an EBP or an array of EBPs in a community (with poor reach and low funding) is no longer sufficient; communities must be held accountable for population levels of children's mental health, and for disparities in mental health across race, ethnic, income, geographic, and cultural groups. Only when these metrics are put into place and publicly reported will policymakers be moved to make the reforms that are required for a primary care system for children's mental health.

RECOMMENDATIONS

- Psychologists must lead scientific creativity and discovery of novel approaches to improving population mental health of children.
- Psychologists must lead the rigorous evaluation of the implementation and impact of novel approaches to population mental health of children.
- Communities must be held accountable for the population mental health of children and disparities across groups, through integrated data systems and public policies.

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CHAPTER 2

Integrating Implementation Science

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BOTTOM LINE

- Multilevel barriers and facilitators to child mental health evidence-based practice (EBP) adoption, implementation, and sustainment have been identified at the intervention level, individual level (i.e., characteristics of the people involved), inner setting (i.e., organization) level, and outer setting (e.g., health system, community) level.
- Implementation science—the study of strategies to encourage uptake of EBPs in routine practice—holds promise for promoting the adoption, implementation, and sustainment of EBPs for child mental health across a variety of settings.
- Those wishing to implement an EBP for child mental health should attend to the barriers and facilitators at each level within the specific context in which they are implementing and should do so using a thoughtful implementation process (i.e., from planning through sustainment).

Currently, there are historically high rates of youth mental health challenges among young people in the United States (CDC, 2022b)—which have only risen during the COVID-19 pandemic (Leeb et al., 2020), particularly among youth from minoritized and marginalized groups such as racial and ethnic minority, low-income, female, LGBTQ+, and immigrant and migrant youth (Benton et al., 2022; Parenteau et al., 2022; Samji et al., 2022). We are not meeting these mental health needs of our country's youth (Christensen, 2023), both because of a treatment gap (i.e., not enough youth able to access treatment) and a research-to-practice gap (i.e., lack of incorporation of evidence-based interventions into routine practice). While the treatment gap for youth mental health is substantial—the Centers for Disease Control and Prevention (CDC) estimates that approximately 20% of children have a mental, emotional, or behavioral disorder; however, only about 20% of this 20% of children receive treatment from a specialized mental healthcare provider (CDC, 2022a)—this chapter focuses on the evidence base for addressing the research-to-practice gap. We examine implementation of both evidence-based treatments for mental health challenges—which are largely delivered in community or specialty mental healthcare settings—as well as evidence-based practices (EBPs) delivered across a variety of child-serving settings (e.g., schools, child welfare, juvenile justice) that aim to prevent the emergence of mental health challenges altogether. Closing the research-to-practice gap across both types of EBPs holds promise for reducing the overall youth mental health burden in the US.

Treatments that children currently receive for mental health challenges are lacking: Children often don't improve

when they receive treatment through a community agency, even when the treatment they receive is evidence-based (i.e., has been found to be efficacious when tested in a randomized trial; Garland et al., 2010; Garland et al., 2013; Weisz, Kuppens, et al., 2013; Weisz, Ugueto, et al., 2013). Research has found that when youth receive usual care treatment, they experience a wide variety of outcomes across studies, and average effect sizes are very small, suggesting youths receiving these treatments improve minimally (Weisz et al., 2006).

These poor outcomes are evidence of the substantial research-to-practice gap in child mental health promotion and treatment: Although researchers have identified myriad effective, evidence-based treatments (e.g., cognitive behavioral therapy) and population-based preventive interventions (e.g., early intervention programs in education and healthcare settings) for child and adolescent mental health (Chorpita et al., 2011; Dodge, 2022; Fagan et al., 2019; Higa-McMillan et al., 2016), translation of these EBPs into routine practice is slow. A nationally representative survey of youth mental health providers found that on average, providers report using strategies from EBPs "sometimes" or "often," but the most important or potent EBP strategies (e.g., activity scheduling for depression, exposure for anxiety) tended to be the least used (Cho et al., 2019). Importantly, youth from minoritized groups are not only less likely to access mental healthcare (i.e., treatment gap), but are also less likely to receive EBPs and/or are more likely to experience worse outcomes than their peers from nonminoritized groups (i.e., research-to-practice gap; Dodge, 2022; Hoffmann et al., 2022; Rodgers et al., 2022).

In recognition of the profound mental health burden of our country's children and the lack of access to quality mental health-related interventions, the American Academy of Pediatrics, the American Academy of Child and Adolescent Psychiatry, and the Children's Hospital Association declared a national emergency in child and adolescent mental health (AAP et al., 2021), and the Biden administration has allocated significant funding towards children's mental health services provided by schools and Certified Community Behavioral Health Clinics (Biden, 2022; The White House, 2022). Now, we need a "child mental health moonshot" (Christensen, 2023) to make it easy for all to access high-quality, evidence-based mental health primary prevention interventions and treatments.

Implementation science, or "the scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice, and, hence, to improve the quality and effectiveness of health services and care" (Eccles & Mittman, 2006), is well poised to close the research-to-practice gap for child mental health. Importantly, scientists have been studying how best to implement EBPs for young people in community settings for over 2 decades, and there is a rich evidence base. This chapter reviews barriers and facilitators (i.e., factors that make it easier and harder) to implement evidence-based practices for youth mental health, identifies strategies based on the extant literature to promote EBP implementation, and provides recommendations for future research.

While this chapter focuses specifically on youth mental health, we must note that the physical health of our country's youth also has room for improvement, especially that of youth from minoritized and marginalized groups who experience disparities in both physical health outcomes and access to high-quality treatment for physical health conditions (Borschuk & Everhart, 2015; Como et al., 2019; Goyal et al., 2020). The implementation science learnings and principles that we outline in this chapter are also broadly applicable to evidence-based practices for physical health issues among youth, and there is a body of literature—outside of what we review in this chapter—that examines these topics specifically. However, since there is no physical health without mental health, and addressing the mental health burden of our country's youth is mission critical to promoting their overall health, we focus the remainder of this chapter on implementation of evidence-based practices for youth mental health promotion and treatment.

Barriers and Facilitators to Implementing EBPs for Youth Mental Health

Table 1 outlines findings from the extant literature on barriers and facilitators to implementing EBPs for youth mental health. Our review of these multilevel barriers and facilitators is informed by the updated Consolidated Framework for Implementation Research (CFIR; Damschroder et al., 2009; Damschroder et al., 2022).

A Proposal for Mental Health EBP Implementation

As outlined in Table 1, many factors can affect successful implementation and scale-up of preventive- or treatment-focused EBPs for youth mental health. Most important are: undesirable characteristics of the EBP or difficulty incorporating the EBP into existing practice; setting-EBP mismatch; limitations of resources such as financial supports, adequate and appropriate physical space, and training and ongoing supervision; lack of support from the EBP deliverer, organization or community leadership, and/or the target population and surrounding community; and recipient-EBP mismatch. To implement child mental health EBPs successfully, implementers should attend to each of the levels outlined in the updated CFIR (Damschroder et al., 2009; Damschroder et al., 2022). Furthermore, to ensure successful, equitable, population-level implementation, implementers must attend to both the community capacity (i.e., top-down factors) and each individual recipient's needs (i.e., bottom-up factors; Dodge, 2022).

ADDRESSING COMMUNITY CAPACITY

To address community capacity, implementers should approach implementation of EBPs using a four-step process, originally developed by Aarons and colleagues (2011), to which we have applied a population-level lens to ensure broad access to EBPs for all (Schriger & Beidas, 2022).

Step 1. Exploration

Conduct a Community Needs Assessment

Work with the intervention's target population, potential intervention deliverers, organizational leadership, and members of the community to understand their needs and priorities, as well as challenges that they have experienced during any past implementation attempts.

Step 2. Preparation

Gather Partner Team, Select and Adapt the EBP, Select Implementation Strategies and Implementation and Clinical Outcomes, and Make a Plan for Implementation and Sustainment

Gather a team of individuals from the groups that were engaged during Step 1 and who can provide diverse perspectives throughout the implementation process, as well as champions from within the organization(s). Next, work with the partner team to select an appropriate and feasible EBP, attending to the intervention-setting fit and ensuring the EBP is appropriate, culturally responsive to, and evidence-based for both the target population and the individuals delivering the intervention. Adaptation of the EBP (while retaining key or active ingredients) may be needed prior to implementation. After EBP selection, work with the partner team to identify multilevel barriers and facilitators (such as those listed in Table 1) and select implementation strategies to target them. Implementers should also identify which clinical outcomes (e.g., symptoms, functioning) and implementation outcomes (e.g., reach – the proportion of eligible participants who receive the intervention) they will use to monitor and evaluate the success of implementation efforts. Lastly, implementers should make a plan for both implementation (e.g., specific plan for how to roll out the intervention) and sustainment (e.g., identifying sources of long-term funding, building organizational capacity).

Step 3. Implementation

Hire and Train Individuals in the EBP; Launch the EBP; Ensure Access to Ongoing Supervision, Consultation, and Feedback; and Monitor Outcomes and Fidelity

As evidenced in Table 1, ongoing support for intervention deliverers is crucial to successful implementation and sustainment; individuals delivering the EBP should also be provided with feedback on how they are doing to help them identify areas for improvement. Continuously monitoring individuals' fidelity to the intervention and monitoring clinical and implementation outcomes will help implementers identify problem areas and areas that are going well; this information can be fed back to intervention deliverers and organizational leadership to ensure continuous commitment to reaching implementation and clinical outcome goals.

Step 4. Sustainment

Continue Monitoring Outcomes, Identifying Problem Areas as They Emerge, and Working to Improve on These Issues

ADDRESSING INDIVIDUAL RECIPIENT NEEDS

To address the challenge of equitably reaching every child in a community, it is important to identify each individual's needs and connect them to a tailored EBP. The following three-step process can be followed to achieve this (Dodge, 2022).

Step 1. Connect With Every Child and Family in the Community at Various Points Across the Lifespan

Like primary care in medicine, which aims to reach every child via well-child visits even when the child is not (yet) sick, mental health and well-being checkups should be offered to every family in the community across the lifespan. One potential time to connect with children and families is at the time of the child's birth. For example, the Family Connects program (Dodge et al., 2022) attempts to reach every family giving birth in a community at the birthing hospital by offering at least one home visit to connect with the family and offer support. Pediatric primary care offers another opportunity in early childhood to offer mental health screening and support to the majority of U.S. families that attend well-child visits. Lastly, kindergarten matriculation offers another nearly universal opportunity to reach families through schools and school systems.

Step 2. Identify Individual Child Mental Health Needs Through Screening

During the points of connection identified in Step 1, every child and family should be screened with evidence-based assessment tools to identify individual child and family needs at their particular point in the lifespan. Early in life, the needs may be more at the family level (e.g., parental depression or substance use), whereas as the child ages, the needs may become more child-focused (e.g., developmental delay, autism, anxiety, externalizing behavior).

Step 3. Connect Every Child in Need With a Matched EBP

Once a particular child's mental health need is identified, the work conducted in the four-step process above can be marshaled to connect that child with an available EBP in the community. This process should involve more than a passive referral; it should involve provision of support to the family for initiating and sustaining involvement in the EBP and should ensure matching for cultural and individual appropriateness of the EBP for the child. If an initial connection is unsuccessful, an alternate provider or alternate EBP should be explored.

Conclusion and Next Steps

It is time for our children’s mental health moonshot. If not now, when? Our young people are in crisis. There is a rich literature on how to proceed to address the child mental health research-to-practice gap, and we are at a critical inflection point where there is motivation, will, and resources to move forward. Below, we outline recommendations and next steps. While the learnings we have outlined and the recommendations we make below focus on implementation of evidence-based practices for youth mental health, it is important to remember that these recommendations and next steps are also applicable to implementation of evidence-based practices for physical health in youth, and additional research in this area is also warranted.

As evidenced in Table 1, many of our “validated” EBPs for youth mental health were not designed with the target population and/or setting in mind and may not be appropriate or effective for specific target populations. Thus, additional research is needed to test new or adapted EBPs for new settings or end users. To promote expedient translation of research findings into practice—to get effective interventions to those who need them—researchers can leverage study designs that include both effectiveness outcomes (i.e., impact on participant outcomes) and implementation outcomes (i.e., degree of adoption of the EBP, factors that facilitate or impede

implementation; Beidas et al., 2023). We recommend that funders prioritize projects that use these hybrid effectiveness-implementation study designs (Beidas et al., 2023; Curran et al., 2012; Curran et al., 2022) to evaluate new and adapted EBPs for child mental health.

Once effective EBPs—and factors impacting their implementation success—are identified, strategies should be developed to promote wide-scale implementation in the target setting. The field of implementation science has identified and tested several frameworks that can be used to identify and design implementation strategies to address multilevel contextual factors; these frameworks hold promise for improving implementation and clinical outcomes in the child mental health arena, although further research on their use is needed (Powell et al., 2017). Additionally, insights from behavioral economics—such as the EAST Framework (i.e., making the intervention Easy, Attractive, Social, and Timely; Service et al., 2015), financial incentives, and creating defaults—hold promise for facilitating child mental health EBP implementation, although further research regarding the effectiveness of behaviorally informed implementation strategies in community mental health settings is also needed (Beidas et al., 2021). To equitably promote child mental health and wellbeing, future research and research funding should focus on applying and evaluating these promising strategies.

RECOMMENDATIONS

- To expedite translation of research learnings into practice, funders should prioritize studies of child mental health EBPs that assess both effectiveness and implementation outcomes.
- Before an EBP is selected for implementation, its appropriateness for the target population and setting should be evaluated, and adaptation for the target population and setting may be necessary.
- When an EBP is determined to be appropriate and ready for implementation at scale, implementers should identify the barriers and facilitators specific to the implementation context and identify implementation strategies to overcome them. This work should be done in close collaboration with community partners.

THOUGHT & ACTION QUESTIONS

- Which child mental health-promoting EBPs hold the most promise for culturally appropriate, wide-scale implementation and dissemination?
- Which organizations and public systems are poised for large-scale child mental health EBP implementation and amenable to community-academic partnerships to evaluate implementation and sustainment of these EBPs?
- What policy solutions (e.g., financial supports) are needed to facilitate EBP implementation and sustainment and overcome persistent barriers to this work in community and publicly funded child-serving settings?

TABLE 1.

BARRIERS AND FACILITATORS TO IMPLEMENTATION AND/OR SUSTAINMENT OF EBPS TO PROMOTE CHILD MENTAL HEALTH, LISTED ALPHABETICALLY WITHIN DOMAIN.

Determinant	Definition	Summary of findings	Sources
INTERVENTION LEVEL			
Barriers: Things that have been found to reduce or inhibit EBP implementation and/or sustainment			
Undesirable characteristics of the EBP itself or difficulty incorporating the EBP	Elements of the EBP that hinder implementation or make it difficult or undesirable for individuals to deliver.	<ul style="list-style-type: none"> • Complexity and difficulty of using and/or mastering the EBP • Time required to implement the EBP • Difference or divergence between the EBP and current workflow or practices • Degree of structure of the EBP; more structured EBPs may be perceived as inflexible and more difficult to use to meet individual client needs, negatively impacting uptake 	Aarons, 2005; Brookman-Frazee et al., 2022; Frank et al., 2021; Mitchell, 2011; Stewart, Beidas, et al., 2021
Setting-EBP mismatch	Inappropriateness of the EBP for the delivery setting or elements of the EBP that make it difficult to implement in a particular target setting.	<ul style="list-style-type: none"> • Challenges with scale-up; many EBPs were not developed with dissemination and scale-up in mind, and may be too complex to be feasible for implementation in a large public system (e.g., behavioral health, child welfare, education, juvenile justice, and public health) – for example, because they require skills or knowledge that the system's workforce does not have • Inappropriateness of the EBP due to the setup of the physical space within the delivery setting • Lack of fit between the EBP and the organizational setup of the delivery setting (e.g., short class periods in a school setting) may lead intervention deliverers to adapt the EBP in a way that decreases effectiveness, leading to poor participant outcomes, and thus reducing intervention deliverers' likelihood of sustaining the EBP in the long term 	Brookman-Frazee et al., 2022; Eiraldi et al., 2015; Fagan et al., 2019; Langley et al., 2010
Recipient-EBP mismatch	Inappropriateness or ineffectiveness of the EBP for the target recipient(s) that makes implementation difficult or less likely.	<ul style="list-style-type: none"> • EBPs may be inappropriate or ineffective for the target population due to factors such as client age, comorbidities, literacy, or cognitive deficits • EBPs tend to be tested with specific populations (e.g., predominantly white participants, participants without comorbidities); many EBPs have not been designed with and tested for a generalizable and representative population, and thus, may not be culturally relevant or appropriate for the target population with whom they are implemented • The effects of EBPs (including EBPs that have undergone cultural adaptation) on racially and ethnically minoritized youth have seldom been tested • EBPs may target outcomes (e.g., individual symptoms or behaviors) that are not clinically relevant to all individuals within the target population 	Brookman-Frazee et al., 2022; Fagan et al., 2019; Finch et al., 2020; Kirmayer, 2012; Lewis et al., 2019; Mitchell, 2011; Pagoto et al., 2007; Pina et al., 2019; Rodriguez et al., 2018

Facilitators: Things that have been found to increase or make it easier to implement and/or sustain EBP			
EBP adaptability	EBPs being able or allowed to (effectively and appropriately) be adapted, which can promote EBP implementation or sustainment.	<ul style="list-style-type: none"> • Being able to make systematic adaptations to EBPs in a way that retains key components (sometimes known as 'active ingredients') of the EBP can improve fit between the EBP and the target population or setting (thus promoting implementation), without negatively impacting effectiveness • Leveraging user-centered design for the adaptation of EBPs (i.e., when making adaptations, leveraging knowledge about the people and places that will eventually be using the intervention) can promote EBP usability within the delivery setting, thus increasing the likelihood of successful implementation • To facilitate EBP implementation and sustainment, as Kirmayer (2012) describes, adaptation should also take a <i>cultural humility</i> approach (i.e., acknowledgement of one's limited knowledge and understanding of others' cultures and openness to participants' culturally informed conceptualizations of their experiences; being cognizant of stereotyping or overgeneralizing the target population, and aiming to ensure adequate flexibility and appropriateness of the adapted intervention for the diverse lived experiences of the target population) rather than a <i>cultural competence</i> approach (which posits that: mental health interventions can reduce health disparities; cultural adaptation makes interventions more accessible, acceptable, and effective; and providers can acquire knowledge, attitudes, and skills that can increase their ability to deliver effective and culturally appropriate interventions). The cultural competence approach is less preferred because: health disparities are driven by structural problems and cannot be solved by mental health interventions alone; cultural adaptation of interventions may not be needed or may reduce effectiveness of the intervention; and changes in intervention deliverers' knowledge, skills, or attitudes may not be sufficient to change their behavior. 	Blase & Fixsen, 2013; Brookman-Frazee et al., 2022; DelVecchio Good & Hannah, 2015; Eiraldi et al., 2015; Finch et al., 2020; Kirmayer, 2012; Lyon & Bruns, 2019; Molloy et al., 2013; Regan et al., 2017
Positive characteristics of the EBP itself	Characteristics of the EBP that make it easier or more likely for individuals to deliver.	<ul style="list-style-type: none"> • Ease of use of the EBP • Flexibility or adaptability of the EBP 	Bach-Mortensen et al., 2018; Eiraldi et al., 2015; Finch et al., 2020; Rodriguez et al., 2018

INDIVIDUAL LEVEL

Barriers: Things that have been found to reduce or inhibit EBP implementation and/or sustainment

Attitudes or beliefs of the intervention deliverer	Attitudes or beliefs of those delivering the intervention (e.g., clinicians, teachers, case workers) that can hinder EBP implementation or sustainment.	<ul style="list-style-type: none"> ▪ Negative attitudes about the specific EBP or EBPs in general (e.g., EBP is hard to deliver, EBP is not as effective as clinical judgment or what the individual already does in their daily practice, EBP [and its evidence base] is not credible, EBP does not work in individual's specific setting or with their client population, EBP is too restrictive) ▪ Lack of openness to innovations generally or the EBP specifically ▪ Belief that the EBP will negatively impact participants' symptoms ▪ Stigma or implicit bias toward mental health challenges ▪ Of note: there is limited evidence regarding the impact of racism and cultural humility on providers' delivery of EBPs for youth mental health. In Hall and colleagues' (2015) systematic review of implicit bias among healthcare professionals, evidence was mixed as to whether implicit bias has an impact on (non-mental healthcare) providers' evidence-based treatment decisions. However, given the multiple causal pathways through which providers' implicit bias has the potential to negatively impact mental health outcomes, Merino and colleagues (2018) recommend that future research examine how implicit bias may impact treatment decisions and provision of mental healthcare. 	Aarons, 2005; Beidas et al., 2015; Finch et al., 2020; Frank et al., 2021; Hall et al., 2015; Lewis et al., 2019; Merino et al., 2018; Mitchell, 2011; Proctor et al., 2007; Stewart, Beidas, et al., 2021; Stull et al., 2013; Williams & Beidas, 2019
Characteristics of the intervention deliverer	Other (nonattitudinal or belief-related) characteristics of those delivering the intervention that can hinder EBP implementation and sustainment.	<ul style="list-style-type: none"> ▪ Lack of expertise in the EBP or knowledge about the EBP ▪ Lack of expertise in working with the target population(s) (e.g., parents) ▪ Lack of cultural understanding of differences across the target population or how to deliver the EBP appropriately across groups ▪ Lack of self-efficacy or confidence; experiencing doubt or uncertainty when delivering the EBP ▪ Lack of intrinsic motivation to deliver the EBP (especially after external supports end) ▪ Lower level of commitment to one's organization ▪ Burnout, job dissatisfaction, stress, and lack of social support have all been found to contribute to staff turnover, thus hindering EBP sustainment within an organization over time 	Bach-Mortensen et al., 2018; Beidas et al., 2015; Beidas et al., 2016; Brookman-Frazee et al., 2022; Davis et al., 2021; Eiraldi et al., 2015; Fagan et al., 2019; Finch et al., 2020; Frank et al., 2021; Mor Barak et al., 2001; Rohrbach et al., 1993; Stephan et al., 2012; Williams & Beidas, 2019

Characteristics of the target population	Characteristics of those receiving the intervention that can hinder EBP implementation and sustainment.	<ul style="list-style-type: none"> • Lack of child or parent interest or engagement in the EBP generally, or in specific parts of the EBP (e.g., disinterest in participating in a specific delivery format such as a group setting) • Parents or children being unprepared, unapproving, unhelpful, or unsupportive of the EBP • Lack of participant attendance or inconsistent attendance • Parents having difficulties engaging in EBP activities • Parent beliefs about their child's mental health challenge (e.g., causes, chronicity, severity) can exacerbate difficulties with parent engagement • Participant preference for a different approach than the EBP 	Brookman-Frazee et al., 2022; Finch et al., 2020; Frank et al., 2021; Langley et al., 2010; Lau et al., 2018; Rodriguez et al., 2018
Emotional impacts on intervention deliverers	Impacts of delivering the EBP on the emotional experiences of intervention deliverers that can hinder EBP implementation and sustainment.	<ul style="list-style-type: none"> • Desensitization • Burnout • Fear • Stress • General emotional burden, especially when the EBP involves working with specific populations such as youth who have experienced trauma 	Finch et al., 2020; Frank et al., 2021; Williams & Beidas, 2019
Financial factors	Factors related to finances that impact individuals delivering the intervention and hinder their ability to deliver the EBP.	<ul style="list-style-type: none"> • Financial strain has been found to be directly, inversely related to community mental health clinicians' implementation of EBPs with fidelity • Financial strain is associated with clinician turnover, thus impacting EBP sustainment over time within an organization 	Last et al., 2022
Facilitators: Things that have been found to increase or make it easier to implement and/or sustain EBP			
Attitudes or beliefs of the intervention deliverer	Attitudes or beliefs of those delivering the intervention (e.g., clinicians, teachers, case workers) that can promote EBP implementation or sustainment.	<ul style="list-style-type: none"> • General positive attitude about the specific EBP being implemented, or about EBPs in general • Perception that the benefits outweigh any negative impacts of the EBP on the recipient • Intentions to use an EBP have been found to be strongly associated with later implementation 	Brookman-Frazee et al., 2022; Fishman et al., 2018; Frank et al., 2021; Williams, 2015; Williams & Beidas, 2019
Attitudes or beliefs of the organization leader	Attitudes or beliefs of individual leaders within an organization that can promote EBP implementation and sustainment.	<ul style="list-style-type: none"> • Positive attitude about the specific EBP being implemented 	Rodriguez et al., 2018
Champions	Individuals within the organization that either organically take initiative to promote EBP implementation within their organization, or are identified and selected by an outside party (e.g., outside team initiating EBP implementation) to help promote EBP implementation within their organization.	<ul style="list-style-type: none"> • Formally identifying champions to help facilitate EBP implementation can increase EBP adoption • Champions can improve intervention deliverer attitudes towards the EBP • Champions can assist specifically with: overcoming barriers to the EBP posed by the clinic or system, increasing staff motivation or engagement, and promoting sustainment 	Lewis et al., 2019; Rodriguez et al., 2018; Wood et al., 2020

Leadership support and implementation leadership	Leadership support can take many forms, including provision of physical supports (e.g., resources), providing verbal support to intervention deliverers, or making clear that leadership supports or endorses EBP implementation. <i>Implementation leadership</i> specifically involves leaders engaging in behaviors that promote EBP implementation.	<ul style="list-style-type: none"> Leadership can ensure adequate provision of resources to help promote staff's ability to implement the EBP Support from organization leaders of the EBP generally, or of specific activities (such as measurement and feedback or integration of the EBP into the workflow) can promote EBP implementation Implementation leadership can improve <i>implementation climate</i> (i.e., expectations, support, and rewards for delivering EBP), which subsequently increases EBP implementation 	Eiraldi et al., 2015; Fagan et al., 2019; Finch et al., 2020; Forman et al., 2009; Frank et al., 2021; Langley et al., 2010; Lewis et al., 2019; Li et al., 2018; Mitchell, 2011; Pagoto et al., 2007; Rohrbach et al., 1993; Torrey et al., 2012; Williams & Beidas, 2019; Williams et al., 2020
Positive impacts of the EBP on participants	When intervention deliverers or organizational leaders observe improvements in recipients, it can increase or sustain their commitment to EBP implementation.	<ul style="list-style-type: none"> Witnessing recipients' improved outcomes or witnessing examples of treatment effectiveness can promote EBP implementation among staff and can promote leaders' commitment to sustainment of the EBP within their organization Witnessing positive impacts of program delivery on participants can also increase provider comfort with the EBP 	Finch et al., 2020; Forman et al., 2009
Relationship between intervention deliverer and recipient	The interpersonal relationship that is established between the intervention deliverer and recipient can facilitate EBP implementation.	<ul style="list-style-type: none"> Having a high-quality therapeutic relationship with the recipient can increase individuals' use of EBPs Building rapport and a sense of safety with the recipient before EBP implementation can increase individuals' willingness or likelihood to implement an EBP 	Finch et al., 2020; Frank et al., 2021
INNER SETTING LEVEL			
Barriers: Things that have been found to reduce or inhibit EBP implementation and/or sustainment			
Competing priorities	Responsibilities or expectations placed on the workforce by the organization that can crowd out staff's available time to implement the EBP.	<ul style="list-style-type: none"> Difficulty fitting in EBP delivery among other job responsibilities or expectations can hinder EBP implementation 	Finch et al., 2020; Langley et al., 2010
Costs	Costs that the organization incurs from EBP implementation or sustainment. These can be a barrier to organizations' ability to implement and sustain EBPs.	<ul style="list-style-type: none"> Costs for staff to attend EBP training, which tend to recur for organizations amidst staff turnover Costs to the organization for missed work time from staff attending EBP trainings and/or consultation meetings Non-billable costs associated with delivery of the EBP (e.g., session preparation, note writing, collecting and scoring outcome measures) 	Eiraldi et al., 2015; Proctor et al., 2007; Regan et al., 2017; Stewart et al., 2016
Intervention support after initial training	Support provided by the organization after staff are initially trained in the EBP – which typically takes the form of supervision, coaching, feedback, and/or consultation – to help staff learn, practice, and hone their ability to successfully and correctly implement the EBP.	<ul style="list-style-type: none"> Insufficient ongoing supervision, coaching, feedback, and/or consultation provided by the organization after initial training has been found to hinder EBP implementation and sustainment 	Brookman-Frazee et al., 2022; Eiraldi et al., 2015; Fagan et al., 2019; Finch et al., 2020; Forman et al., 2009; Frank et al., 2021; Langley et al., 2010; Lewis et al., 2019; Regan et al., 2017; Rodriguez et al., 2018

Organization-EBP mismatch	Differences between the organization and the EBP that make implementation difficult or less likely.	<ul style="list-style-type: none"> • Lack of alignment between the EBP and the organization's: <ul style="list-style-type: none"> » Mission » Values » Goals » Priorities • Lack of leadership investment in the intervention's success 	Bach-Mortensen et al., 2018; Eiraldi et al., 2015; Forman et al., 2009; Langley et al., 2010; Mitchell, 2011; Williams & Beidas, 2019
Resource limitations	Limitations in availability of the various resources needed by the clinic at large, or needed by clinic staff, to successfully implement and sustain EBPs.	<ul style="list-style-type: none"> • Insufficient time, financial resources, or staff to implement and monitor the EBP, and insufficient time or financial resources for staff to prepare for EBP delivery, can hinder EBP implementation • Lack of or inappropriateness of physical space for EBP delivery can hinder EBP implementation 	Bach-Mortensen et al., 2018; Davis et al., 2021; Eiraldi et al., 2015; Fagan et al., 2019; Finch et al., 2020; Frank et al., 2021; Langley et al., 2010; Lewis et al., 2019; Mitchell, 2011; Pagoto et al., 2007; Regan et al., 2017; Stewart, Beidas, et al., 2021; Stewart, Mandell, et al., 2021; Williams & Beidas, 2019
Social norms	The beliefs, attitudes, values, or behaviors of a group.	<ul style="list-style-type: none"> • Perception that nobody is delivering the EBP 	Stewart, Beidas, et al., 2021
Training	The initial training that individuals receive on how to deliver the EBP.	<ul style="list-style-type: none"> • When organizations do not provide access to high-quality training, it can hinder their workforce's ability to implement the EBP • Of note, lay providers (e.g., juvenile probation officers, caseworkers, teachers) in public systems may need additional training and support as they take on a new mental health-focused service delivery role 	Brookman-Frazee et al., 2022; Fagan et al., 2019; Finch et al., 2020; Forman et al., 2009; Lewis et al., 2019; Pagoto et al., 2007; Regan et al., 2017
Turnover	Turnover occurs when existing staff within an organization leave and are replaced by new staff.	<ul style="list-style-type: none"> • Turnover of staff trained in EBP can challenge an organization's ability to retain a workforce trained in EBP, thus hindering EBP implementation and sustainment 	Brookman-Frazee et al., 2022; Eiraldi et al., 2015; Fagan et al., 2019; Forman et al., 2009; Lewis et al., 2019; Regan et al., 2017; Rodriguez et al., 2018
Facilitators: Things that have been found to increase or make it easier to implement and/or sustain EBP			
Climate	Employees' perceptions of the environment in which they work and the environment's impact on employees.	<ul style="list-style-type: none"> • Positive climate can promote EBP implementation • More functional climates (i.e., climates in which individuals feel they are able to do their jobs effectively) are more likely to implement EBP 	Beidas et al., 2015; Mitchell, 2011; Williams & Beidas, 2019
Commitment to staff interests and goals	Organizations' commitment to and willingness to take action to promote alignment of staff members' values, interests, and goals with what they are being asked to do (deliver EBP).	<ul style="list-style-type: none"> • Organizations that focus on promoting fit of an EBP with its staff's clinical interests, goals, or specializations have been found to be more successful at sustaining EBPs • Similarly, organizations that have established systems in place to promote this fit are more likely to sustain EBPs 	Rodriguez et al., 2018

Culture	Expectations, values, and norms within an organization.	<ul style="list-style-type: none"> Organizational support for EBP delivery Organizational expectations that EBPs will be implemented Trust and teamwork among staff within the organization Cultures with high openness, learning, flexibility, and tolerance for risks Cultures with lower levels of valuing clinical freedom, autonomy, and/or eclecticism Proficient organizational cultures (i.e., expectations and norms that clinicians remain proficient in recent treatment practices and prioritize client outcomes) Organizational commitment to EBPs can reduce staff turnover, thus facilitating sustainment of EBPs within the organization over time 	Bach-Mortensen et al., 2018; Eiraldi et al., 2015; Frank et al., 2021; Glisson, Landsverk, et al., 2008; Glisson, Schoenwald, et al., 2008; Glisson et al., 2016; Li et al., 2018; Mitchell, 2011; Mor Barak et al., 2001; Rodriguez et al., 2018; Williams & Beidas, 2018; Williams & Beidas, 2019
Monitoring and evaluation	An organization's use of strategies to monitor and evaluate EBP delivery and effectiveness.	<ul style="list-style-type: none"> Integration or availability of evaluation and monitoring of EBP delivery, as well as feedback on EBP delivery, can help promote EBP implementation and sustainment When an organization's monitoring and evaluation data show improvement in recipients' outcomes, it can increase or help sustain leadership and staff support for the EBP Organizations that regularly monitor EBP implementation and fidelity can catch problems early, before larger issues with EBP implementation and sustainment arise 	Fagan et al., 2019; Li et al., 2018
Organizational readiness for change	An organization's willingness, ability, and commitment to enacting change.	<ul style="list-style-type: none"> Organizational readiness for change can facilitate EBP implementation 	Eiraldi et al., 2015
OUTER SETTING LEVEL			
Barriers: Things that have been found to reduce or inhibit EBP implementation and/or sustainment			
Barriers specifically impacting minoritized and marginalized communities	Outer setting factors such as racism (including structural racism), poverty, and medical mistrust that can impact minoritized and marginalized individuals' access to or receipt of EBPs.	<ul style="list-style-type: none"> These factors contribute to minoritized and marginalized communities being less likely to access or receive EBPs 	Castro-Ramirez et al., 2021
Cultural norms	Norms or expectations among members of the community surrounding the specific intervention delivery context.	<ul style="list-style-type: none"> Lack of acceptance of talking about mental health or accessing mental healthcare within the community can hinder EBP implementation 	Frank et al., 2021
Involvement of or coordination among child-serving agencies	The degree to which various child-serving agencies are able to effectively interact with the organization in which the EBP is being delivered. Child-serving agencies can include child protective services or child welfare agencies, courts, schools, specialty mental healthcare agencies, and community mental healthcare agencies.	<ul style="list-style-type: none"> Challenges with coordinating a child's care across child-serving agencies can hinder EBP implementation Involvement of child protective services or courts can hinder intervention deliverers' ability to implement an EBP (e.g., due to lack of a consistent caregiver to be involved in treatment) 	Davis et al., 2021; Frank et al., 2021; Kerns et al., 2014

Logistical barriers	Challenges presented by the external environment that can hinder recipients' attendance or engagement in the intervention.	<ul style="list-style-type: none"> Logistical challenges such as transportation and childcare can hinder participant attendance; poor participant attendance in turn is a barrier to EBP implementation School breaks interrupt service continuity for school-based EBPs, which can negatively impact overall implementation 	Frank et al., 2021
System-level and insurance-related regulations and requirements	Regulations or requirements enacted by the system in which the delivery setting is located (e.g., health system) and reimbursement criteria implemented by insurance providers that can hinder EBP implementation.	<ul style="list-style-type: none"> Limitations to treatment duration (e.g., session number limits, especially for clients with more chronic or comorbid conditions) Client eligibility requirements for billing and reimbursement Reimbursement misalignment with the EBP itself (e.g., the EBP's duration or number of sessions is not reimbursable or only partially reimbursable; time working with parents may not be reimbursable) 	Brookman-Frazee et al., 2022; Frank et al., 2021; Pagoto et al., 2007; Rodriguez et al., 2018
Facilitators: Things that have been found to increase or make it easier to implement and/or sustain EBP			
Community input and partnerships	When those implementing an EBP interact with and get feedback from members of the surrounding community or establish formal partnerships with the community or community organizations, to promote EBP implementation and sustainment.	<ul style="list-style-type: none"> Community members can help inform selection of the most feasible or appropriate EBPs for the delivery context, and can suggest adaptations that may be needed to meet the community's needs Ongoing partnerships between implementers and the community (e.g., community-academic partnerships) can facilitate: Development or adaptation of an EBP to meet the community's needs, and establishment of contracts with funders to help fund and sustain EBPs long term Partnerships with nonprofit or for-profit organizations in the community that specialize in helping implement and sustain EBPs (called purveyor or intermediary organizations) can promote EBP adoption and sustainment; these organizations can help train and support those implementing the intervention and suggest policy or practice changes that might be needed 	Brookman-Frazee et al., 2022; Eiraldi et al., 2015; Fagan et al., 2019
Community support	Support for EBPs from members of the community surrounding the specific intervention delivery context.	<ul style="list-style-type: none"> Community awareness, support for, and/or demand for the EBP (i.e., a "pull" for the EBP, rather than implementers needing to "push" for the EBP to be implemented) can facilitate EBP implementation and sustainment Registries of EBPs, marketing the EBP, media attention on the EBP, and public awareness campaigns about EBPs can increase public awareness and support for EBPs Partnerships between the delivery setting and other settings (e.g., summer camps, afterschool programs, schools) can increase referrals, and thus, the number of potential recipients seeking the EBP 	Bach-Mortensen et al., 2018; Fagan et al., 2019; Pagoto et al., 2007; Regan et al., 2017
Federal and state statutes and regulations	Statutes or regulations enacted at the federal or state level related to EBP implementation.	<ul style="list-style-type: none"> Federal and state statutes or regulations requiring or encouraging use of EBPs, or allowing funds to be used to implement, evaluate, or scale up EBPs, can heavily impact EBP implementation and sustainment 	Fagan et al., 2019

Funding	Availability of funds from outside the organization to support EBP delivery.	<ul style="list-style-type: none"> • (Continuous) financial support for EBP delivery, provided by government entities or other organizations (e.g., local nonprofit organizations, foundations, large corporations) can facilitate EBP implementation; in some cases, implementation may not be financially possible without external funding • Financial incentives (e.g., enhanced reimbursement rates, pay for performance models, preferred-provider designations) that encourage and reward individuals who deliver EBPs can increase EBP implementation 	Bach-Mortensen et al., 2018; Eiraldi et al., 2015; Fagan et al., 2019; Forman et al., 2009; Langley et al., 2010; Lewis et al., 2019; Stewart et al., 2016; Stewart, Mandell, et al., 2021
Social or professional network	Connections that implementation deliverers have with people – in their professional and personal lives – that can assist with EBP implementation and sustainment.	<ul style="list-style-type: none"> • Knowing other people who are implementing the EBP within one's organization or another organization can facilitate EBP implementation • Collaboration between agencies delivering the same EBP (e.g., sharing information, resources, and advice) promotes successful EBP implementation 	Langley et al., 2010; Palinkas et al., 2014
System leader support	Support from leadership of the larger system in which the delivery setting is located (e.g., health system) for EBP implementation and sustainment.	<ul style="list-style-type: none"> • Strong system-level leaders that are dedicated to the success of EBP implementation and scale-up, and willing to endorse and/or fund EBPs within their system, can facilitate EBP implementation and sustainment • Educating system-level leaders about the EBP to earn their support (especially in light of regular leadership turnover in large public systems) may be needed to ensure continuous system-level leadership support 	Fagan et al., 2019

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CHAPTER 3

Using Culturally Informed Approaches

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Using Culturally Informed Approaches

ASHANTI BROWN AND ISHA METZGER, PHD

BOTTOM LINE

- To adequately assess primary mental and overall health, the field of psychology needs to move beyond the traditional forms of care and integrate culturally adaptive and culturally *responsive* care to address the needs of underrepresented populations.
- Mental health disparities are persistent across culturally diverse and underserved groups. Continued movement toward cultural responsiveness in mental health treatment is critical and urgently needed.
- In order to provide equitable mental health care, psychologists should acknowledge cultural differences, recognize the in-group differences, and understand the impact of one's cultural history on seeking treatment. In addition, it is imperative to understand various cultures' historical and current systemic inequities that impact those individually, collectively, structurally and multigenerationally.
- Advancing research for diverse and underrepresented perspectives show the promising impact of culturally informed mental health and overall health interventions. Psychologists should use and restructure their approaches to members of underrepresented groups accessing or eager to access care.
- Current mental health treatments and interventions should be extended to be more reflective and accessible of target populations.
- Current treatments should also place an emphasis on the dissemination of evidence-based strategies to the lay public through public health messaging and awareness campaigns.
- Culturally informed approaches to care not only benefit mental health outcomes but physical health outcomes as well. Culturally informed psychological interventions are imperative to address all aspects of overall well-being, as they are inextricably linked.

Psychological theory and mental health practices have emerged and centered around Western ideologies, understanding and traditions of the human mind for centuries. However, this “one size fits all” approach fails to address the constantly evolving needs of historically marginalized and underserved, specifically youth clients. With the shift towards more equitable mental health care, psychologists are urgently called to move beyond Western forms of therapy and make culturally informed adjustments for Black, Indigenous and clients of color. It is essential for the field of psychology to understand the intricacies that encompass cultural diversity in mental health (and overall health). This summary serves to highlight key considerations when providing adequate youth mental and overall health care, as well as the challenges and opportunities for mental health providers to work effectively across cultures.

A simple conceptualization of culturally informed approaches is the inclusion of techniques that are responsive to the unique characteristics of various communities and individuals. Culturally specific modes of therapy have a range of implications that are structured to address inequities in assessment and standard clinical practice. It is also important

to acknowledge cultural differences in response to one's therapeutic needs. An individual's culture could inform how they seek treatment, their perception of treatment (stigma), the client-clinician relationship, and linguistic barriers (Gopalkrishnan, 2018). Racism and discrimination also have a large impact on culturally diverse groups. Despite growing evidence of challenges faced by disadvantaged populations, including members of racial and ethnic minoritized groups, culturally responsive frameworks of therapy have been slow to emerge due to pushback, limited research and funding. Additionally, although emerging, literature surrounding culturally responsive youth mental health care remains understudied.

Historically marginalized youth remain less likely to use and benefit from mental health services (Guo et.al, 2014; La Roche, 2008; Maura & de Mamani, 2017). There is significant evidence that shows culturally diverse communities are more likely to resort to communal avenues (i.e. community leaders, traditional healers, community organizations) other than mental health professionals when dealing with mental distress (USDHHS, 2001). In order to facilitate access to quality, culturally adaptive services, it is necessary to leverage community leaders, organizations, values and research approaches.

The need for culturally informed care is just as integral for youth’s physical health as it is for their mental health concerns. Despite advances towards providing culturally informed care to underserved populations, overall health disparities among races are prevalent. Challenges (e.g., discrimination, historical traumas, systems of oppression, socioeconomic disadvantages) faced by marginalized youth bring attention to increased risks of stressful experiences and developing poorer physical health issues. Diabetes rates have continued to surge amongst American youth, with an increase by 45% for type 1 and an increase by 95% for youth living with type 2 diabetes (Lawrence et al., 2021). Race disparities for diabetes are even more prevalent, with the greatest increases being more common in youth within racial or ethnic minority groups (Lawrence et al., 2021). Similar statistical trends for additional adolescents’ overall health issues (e.g., obesity, alcohol use, sexual risks) exist due to racial disparities and can be linked to social determinants of health. In addition to members of underrepresented populations’ enduring health disparities (e.g., having less access to healthcare, inequities

in healthcare, discrimination in healthcare provision), this challenge also highlights youth’s abilities to inadequately meet and conform to evidence-based strategies.

Providing culturally informed care is challenging; it is essential to collaborate with community organizations dedicated to servicing structurally minoritized and marginalized populations to develop practice-based evidence. Community-based services are integral resources to understanding individual and communities’ strengths, values, histories, family structures, systemic inequities, differences within cultures, and mistrust. For this approach to be practical and sustainable, research funding should be dedicated to underrepresented mental health services through partnerships and community-based health systems (Gopalkrishnan, 2018). This also brings attention to resource allocation for community-based participatory research (CBPR), in which community leaders and members would be involved in all parts of the collaborative research. Community-researcher partnerships would allow for sustained intervention and support for solutions to address mental health disparities (Rasmus, 2019).

RECOMMENDATIONS

- When thinking of ways to approach culturally competent provision, psychologists should consult and partner with community agencies and leaders to construct cultural formulations for treatment and assessment, restructure evidence-based science, and understand community values, challenges and strengths.
- Priority should be placed on directing public funds to implementing mental health interventions with previously disenfranchised groups, while also devoting resources to rigorously evaluating if these interventions have a positive impact on these new groups.
- Resources should be allocated to innovating, adapting, modifying, piloting and then rigorously testing the impact of culturally informed interventions with new groups.
- More resources should be allocated to advanced applications of community based participatory research (CBPR) in intervention science.
- Understanding the existing strengths and resources that are already within the community is pivotal when thinking about “new” ways to make treatment culturally informed.

Research has provided minimal guidance on improving the cultural responsiveness of evidence-based family therapy. Use of evidence-based treatments call for effective interventions that address underrepresented youth. For example, cognitive behavioral therapy (CBT) approaches have largely ignored the cultural needs and values of youth with intersecting identities (race, ethnicity, gender, SES, immigration status, education) (Sanchez et al., 2022). With this, another important aspect of culturally responsive care is the inclusion of familial and social support networks within family-based CBT.

Flexible family-based CBT approaches would allow cultural minority youth to benefit from and engage in mental health services. This is relevant given that specific cultural factors, such as supportive community and familial networks can serve as individual protective factors (DeGarmo et al., 2006).

There continues to be gaps in the literature surrounding the efficacy and effectiveness of programs that are adaptive for racial and ethnic minoritized youth and families. While a number of studies have come to promising findings, there is a relative dearth of attention and funding being given to further

enhance the efficacy of adaptive programs for racial/ethnic groups. Examples of this phenomenon have been prevalent within work with African American youth and families using trauma-focused cognitive behavioral therapy (TF-CBT) to address cultural trauma. Cultural traumas (e.g., intergenerational trauma, racial trauma) include unique experiences to historically marginalized groups and can lead to poorer mental health (and overall health) outcomes in youth and adults.

While TF-CBT has over 15 years of evidence base, funding is needed to support the testing of adaptation to such treatment. For example, racial socialization (RS) strategies for African American youth experiencing race-related trauma have shown promising results to mitigate the effects of

trauma exposure (Metzger et al., 2021; Phipps and Thorne, 2019) yet, no current cultural modifications, such as RS, have been integrated within the TF-CBT framework (Metzger et al., 2021). The EMBRACE Program is an example intervention that seeks to mitigate racial stress and trauma through educating Black families on racial socialization practices, stress management, and bonding (Anderson et al., 2019). This draws attention to preliminary, well-supported cultural treatment to be integrated within existing, established treatments. While the EMBRACE program is culturally adaptive and has some preliminary evidence, more funding is needed to support the testing of its adaptation. Feasibility and acceptability of adaptations into existing treatments is needed.

RECOMMENDATIONS
<ul style="list-style-type: none">• Funding will allow ability to establish feasibility, acceptability and efficacy in addition to effectiveness for culturally adaptive interventions. More research for the integration of evidence-based treatments and culturally responsive adaptations to treatment should be conducted.• Research for the efficacy of evidence-based treatment for both underrepresented youth and adults is considerably limited. Efforts to address this dynamic in current evidence-based approaches are necessary.• Psychologists should incorporate flexible family-based treatment to address youth from underserved populations.

Continuing to develop a culturally informed system of care will also rely on culturally responsive training and consultation. An underemphasis of topics focused on diversity and cultural humility in graduate training programs poses a challenge when trying to provide multiculturally competent services. Learning how to formulate culturally informed case conceptualizations and assessments would aid in sustainable efforts to address culturally informed practices in both mental and physical health and care settings.

Culturally informed behavioral healthcare training should be expanded amongst local leaders and organizations. Local agencies and community organizations would benefit from culturally responsive and evidence-based training opportunities. In addition, more funding could be allocated at the local, state, and regional level to allow for joint efforts and awareness of culturally informed systems of care (Paris, Jr. et al., 2016). Primary mental health research is constantly evolving and requires data and funding that address how to effectively work with clients of historically underrepresented groups.

RECOMMENDATIONS
<ul style="list-style-type: none">• More efforts should be made within graduate and training programs to address cultural competence (i.e., diversity, intersectionality, cultural humility).• Funding for local agencies and community organizations' training opportunities is needed. Community organizations and leaders would benefit from understanding evidence-based training and culturally adaptive models to best serve their community.• Funding should be allocated at the local, state and regional level to allow for more awareness surrounding culturally informed systems of mental health care.

PROGRAMS READY TO SCALE

- TF-CBT has 15 years of evidence base. Funding is needed to support testing of cultural adaptation of TF-CBT.
- EMBRACE (Anderson) program- integrates racial socialization (RS) strategies into family & youth trauma treatment.
- Strong African American Families Program (Brody)- gold standard culturally relevant, preventive intervention for Black youth and families.

GAPS IN THE LITERATURE

- There are culturally adaptive programs that are promising for underrepresented populations yet, few studies have rigorously tested these programs.
- Existing suggestions and promising programs are on the horizon however, such programs are still at the testing stage.

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CHAPTER 4

Universal Screening

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Universal Screening

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BOTTOM LINE

- The effectiveness of population-level prevention initiatives relies on the ability of universal screens to identify youth at risk for mental health problems, ideally early in development, *and* on the capacity of service systems to meet identified needs.
- Screens should be tailored to youth's developmental status and should assess contextual risk factors (e.g., socioeconomic and family adversity) and child risk factors for mental health difficulties (e.g., symptoms of problem behavior).
- Screens should demonstrate adequate predictive validity, acceptability, and feasibility to implement in settings where most youth spend time (e.g., primary care, schools), and frontline providers should be equipped to rapidly interpret screen results and, when indicated, refer to interventions tailored to a child's risk level.
- Tiered service delivery is a promising method for integrating universal screens using tailored interventions. These service systems offer a broad range of programs that are tailored to specific children and contextual characteristics of youth and families.
- Preventive interventions included in tiered systems should be cost effective, strengths-based, culturally informed, and accessible. Home visiting programs are one potential platform for improving accessibility for families who may not otherwise seek care; many of these programs are empirically supported and scalable.

Public health approaches to reducing youth mental health difficulties prioritize prevention at the population level. Preventing mental health problems before they become severe is cost-effective, is in itself a social good (Coie et al., 2000), and would likely have positive collateral effects on children's physical health because of shared risk factors with mental health problems. As an example of the latter, children ages 0–17 exposed to adverse childhood events (ACEs) are at heightened risk for both mental and physical health problems (CDC, 2019). Hence, proactive universal screening initiated as early as possible in development that can then lead to specific evidence-based intervention is preferred over waiting to screen and provide reactive interventions later in development, the latter being the current status quo. Early screening and preventive intervention also capitalize on children's greater neural plasticity in early childhood relative to later ages (Dodge, 2020). The effectiveness of population-level prevention relies on the ability of screens to identify children at risk for later mental health concerns and on the capacity of service delivery systems to incorporate screening results into tailored interventions (Daro & Dodge, 2010).

This memo describes principles of effective universal screens, highlighting a few established and promising screens, some of which have been directly linked to interventions and are/would be feasible to implement in settings that facilitate population-level reach. This memo is meant only to provide a sampling of prototypical measures and recommendations

for incorporating screens and tailored interventions into the *primary mental health care approach*.

Principles of Effective Universal Screening

EFFECTIVE SCREENS SHOULD BE TAILORED TO CHILDREN'S DEVELOPMENTAL STATUS AND SHOULD ASSESS CONTEXTUAL RISK

Universal screening measures may be used to identify existing symptoms of psychological disorders, child attributes predictive of future mental health problems, and/or contextual factors that predict mental health problems (e.g., adverse childhood experiences, protective factors; McEwen & Gregerson, 2019). The extent to which screens assess individual attributes and contextual risk factors varies by children's developmental status. In early childhood (0–5 years), in addition to evaluating emerging child self-regulation abilities, assessment of contextual factors such as exposure to ACEs, family resources, caregiver wellbeing, and parent-child relationship quality is paramount (CDC, 2019). In middle childhood and adolescence, many screens emphasize individual child attributes. These include existing psychological symptoms and child attributes such as elevated externalizing behaviors (e.g., oppositionality, aggression) and internalizing behaviors (e.g., anxiety, depression), with increasing emphasis on risky behaviors during adolescence (e.g., substance use, high-risk sexual activity). Although assessment

of individual attributes should be a priority of screens for school-age children and adolescents, based on ecological theory (Bronfenbrenner, 1986) and the principle of equifinality (i.e., multiple pathways leading to the same problem behavior; Cicchetti & Rogosh, 1996), assessment of contextual risk factors also should be included in screening instruments across children's developmental status. Assessment of contextual factors is especially important for guiding selection of subsequent interventions because of its implications for etiology.

EFFECTIVE SCREENS SHOULD DEMONSTRATE ADEQUATE PREDICTIVE VALIDITY

Predictive validity is a psychometric indicator that is often operationalized using sensitivity and specificity indices. *Sensitivity* is the proportion of true problem cases that are detected by the screen and *specificity* is the proportion of true nonproblem cases that are screened as such (Dodge, 2020). For school-based screens, sensitivity and specificity values above 75% are considered adequate (Glover & Albers, 2007), while screens for conduct disorder propose a minimum of 50% sensitivity (Bennett & Offord, 2001). Acceptable sensitivity and specificity values will differ according to context in which a screen is administered and the gravity of the problem outcome. For example, for costly interventions, maximizing specificity may guard against high false positives, whereas for inexpensive, noninvasive interventions, maximizing sensitivity may be more salient (Petras et al., 2004). It is also important that data on sensitivity and specificity be collected on normative samples that are representative of the population for which the screening instrument will be used (e.g., when screening lower-SES persons the measures' norms are derived from a lower-SES sample).

EFFECTIVE SCREENS SHOULD BE ACCEPTABLE TO STAKEHOLDERS AND FEASIBLE TO IMPLEMENT IN SETTINGS THAT FACILITATE POPULATION-LEVEL REACH

Population-level adoption and sustainment depend on the extent to which parents, youth, providers, teachers, and/or staff perceive a screen to be beneficial and unintrusive. Further, to facilitate universal screening, frontline staff in contexts where most youth and families spend time—such as home visitors, primary care physicians, teachers, or clinic/school staff—should be able to administer and interpret screens in a brief and cost-effective manner. See Glover

and Albers (2007) for practical guidelines in evaluating the validity, acceptability, and feasibility of universal screens.

Scalable Universal Screening Approaches

Below we highlight a sampling of current measurement strategies that encompass the principles described above and that in some cases have been linked to brief interventions. Screens are described in order of their developmental status.

EARLY CHILDHOOD (AGES 0-5)

Although numerous standardized instruments are used in research to assess early childhood problem behaviors (e.g., CBCL; Achenbach, 1991) or contextual risks such as maternal depression (e.g., CES-D; Radloff, 1977), relatively few scalable screens have been designed to assess risk across multiple domains in this developmental period. Most existing screens rely on parent report; some, such as the Baby Pediatric Symptom Checklist (BPSC; Sheldrick et al., 2013) and the Preschool Pediatric Symptom Checklist (PPSC; Sheldrick et al., 2012), are administered in primary care. Barriers to screening in primary care settings include lack of time, pediatricians' lack of confidence in their ability to manage child behavioral problems, and lack of available mental health providers to refer children identified as at-risk (Weitzman et al., 2015). In other settings that reach young children, such as Women, Infant, and Children Nutrition Supplement (WIC) clinics, promising methods for screening across multiple risk domains have been developed for specific research trials (e.g., Dishion et al., 2008). However, these instruments have not been used outside of research, much less scaled.

Screening With Administrative Data

Some promising screening approaches use existing administrative data to circumvent logistical barriers to collecting data from every family in a community prior to school entry. The Hello Baby program, which screens the entire population of families with newborns in Allegheny County, PA, employs one such screening tool shortly after birth (excluding families who opt out) (Vaithianathan et al., 2020). The Hello Baby predictive risk model (PRM) tool uses hundreds of variables from administrative datasets (e.g., days in emergency shelter, parents' encounters with criminal justice system) to estimate an infant's risk of experiencing abuse/neglect and home removal within the first three to four years of life. Experiencing maltreatment in early child-

hood is associated with adverse consequences for children's mental and physical health (CDC, 2019); hence, screening for risk of maltreatment facilitates efforts to prevent a range of health problems. Based on Hello Baby PRM scores, families are offered one of three service tiers and a menu of preventive services appropriate for their level of risk. See Vaithianathan et al., 2020 for full description of Hello Baby and its implementation, including a discussion of how program developers guard against bias.

SCHOOL AGE TO EARLY ADOLESCENCE (AGES 6-13)

Several well-researched screens in middle childhood and early adolescence assess individual and/or contextual risk factors for current and future problem behavior. Here we describe two scalable approaches: the school-based Social and Academic Behavior Risk Screener (SAEBRS) and the Youth Risk Index (YRI) designed for use in pediatric primary care.

Screening in Schools

Schools are increasingly adopting universal screens to inform multitiered systems of support (e.g., Positive Behavior Interventions and Supports; Horner & Sugai, 2015). Teachers may be well-positioned to identify at-risk youth because of their frequent contact with students, and brief, auto-scored teacher reports facilitate rapid assessment of all children in a classroom compared to parent reports. For example, the SAEBRS is a widely used teacher-report screen that assesses individual (but *not* contextual) risk factors and strengths in K-12 students, including risk for emotional, social, and academic problems (Kilgus et al., 2013, 2016). The web-based scale is brief (19 items, 3 min/student), and automatic score reports use research-based cut scores to determine a child's risk status on each subscale. Ninety-minute teacher training has been shown to promote acceptability and predictive validity (von der Embse et al., 2016). Psychometric data supports the validity of the SAEBRS in elementary/middle school samples, while more research is needed to establish validity in high schools. The SAEBRS has already been scaled up, reaching over 5 million students, and guidelines have been developed for using individual- and classroom-level SAEBRS data to inform targeted (i.e., Tier 2) interventions in multitiered systems of support in elementary schools (Kilgus, 2019).

Screening in Primary Care

Pediatric primary care clinics represent another potential setting for population-level screening, as up to 92% of children and 81% of adolescents attend annual well-child visits (U.S. Department of Health and Human Services, 2020). The YRI is a promising primary-care-based screen that is brief (23 items, 7-10 min) and designed to assess propensity for future substance use and conduct problems among 9- to 13-year-old youth. Both conduct disorder and especially substance use disorder are associated with the development of multiple types of mental and physical health problems (Substance Abuse and Mental Health Services Administration, 2021). The YRI is a web-based self-report measure that uses cartoons and audio to promote usability among youth with limited literacy skills. Items are drawn from a 360-item youth-report measure of risk for/exposure to substance use and antisocial behavior (the ALEXSA) based on their strong association with SU initiation and/or >2 conduct disorder behaviors within 1 year of screening in a large sample of 9- to 12-year-olds (Ridenour et al., 2009). The YRI assesses individual and contextual risk factors (e.g., impulsivity, susceptibility to peer pressure, tolerance of deviance) rather than querying substance use directly, which likely promotes acceptability among providers and parents of school-age children. Indeed, this screen has demonstrated high acceptability among youth, parents, and pediatric staff (Ridenour et al., 2015; Galán et al., 2022). The YRI is designed for administration in waiting rooms by clinic staff, and immediate electronic scoring facilitates interpretation by busy pediatricians. The YRI has been used to determine eligibility for preventive intervention (i.e., the Family Check-Up; Galán et al., 2022), but has not yet been scaled for population reach.

Integration of Screening Into Tailored Intervention Models

Screening instruments alone will not promote population youth mental health. For the *primary mental health care approach* to prevent youth psychological problems, service delivery systems must be able to accurately identify youth at risk *and then meet identified needs* (Daro & Dodge, 2010). Universal screening is well-suited for integration into tiered models of service delivery that offer more intensive interventions to youth with more complex needs and lighter-touch interventions to youth who demonstrate moderate levels of risk. Interventions should be empirically supported

and accessible. Further, interventions should be culturally informed, i.e., developed with input from community stakeholders, designed to identify and leverage families' strengths, and tested in representative samples (see memo #6).

Several well-researched programs integrate universal screens into brief, tailored intervention models. Below we highlight two such interventions that are delivered in homes. Home visiting overcomes access barriers such as transportation and childcare. Importantly, both interventions have been tested in racially, geographically, and socioeconomically diverse samples (Family Connects; Goodman et al., 2021, 2022; Family Check-Up; Dishion et al., 2008).

First, Family Connects (FC) is a brief newborn nurse home visiting program designed to prevent child maltreatment, which uses universal home-based assessment with targeted provision of resources (Dodge et al., 2014). The FC assessment is a semistructured, nurse-administered parent interview that assesses contextual factors across four domains (healthcare, home safety, parenting readiness, parent mental health) with high specificity/sensitivity in predicting later child maltreatment (Dodge et al., 2021). Families are then offered services appropriate for their level of risk, and families with significant risk are connected with matched community resources. In this way, the FC model uses universal assessment to inform targeted intervention and serves as a bridge to existing services that may not otherwise be accessed. FC has been linked to reductions in both child maltreatment and frequency of emergency room visits, the latter primarily related to infant physical health conditions (Dodge et al., 2021; Goodman et al., 2019).

Second, the Family Check-Up (FCU) is a brief home visiting intervention with demonstrated efficacy in preventing youth behavior problems by strengthening positive parenting practices and engaging families from birth through age 18

(Dishion et al., 2003; Dishion et al., 2008; Shaw et al., 2021), with long-term positive effects on child mental health (Connell et al., 2019; Hentges et al., 2020; Shaw et al., 2019) and physical health (Montaño et al., 2015; Smith et al., 2014). Based on a health maintenance model, the FCU involves periodic (i.e., yearly) contact with families to proactively detect and prevent problems (Gill et al., 2014). In some cases, FCU providers serve as a bridge to community resources by referring families to services that supplement the FCU (Leijten et al., 2015). The FCU is designed for families who report socioeconomic, parent, and child risk factors for youth behavior problems on screens and is most effective for families at higher risk (Pelham et al., 2017). Because of its effectiveness for high-risk families, the FCU has been included in tiered service delivery models as an option for families with more complex needs (i.e., Hello Baby, The Pittsburgh Study (Roby et al., 2021)). The FCU has also been adapted for online delivery; providing families with a choice between home-based and web-based delivery accommodates a range of family needs/preferences and thus may promote accessibility.

Both Family Connects and the FCU have been scaled and implemented at the population level in several communities in the U.S. and abroad, at a cost of \$700/family (Dodge et al., 2014) and \$480/family (Ridenour et al., 2022), respectively. These programs are typically funded by government agencies or research grants and delivered at no cost to families. Of note, a recent publicly funded implementation of the FCU (i.e., Hello Baby) offered high-risk families financial incentives of up to \$100 for participating.

In sum, tiered service delivery models based on effective universal screening and brief, accessible, tailored interventions have the potential to promote cost-effective use of existing services and increase youth wellbeing at the population level.

RECOMMENDATIONS

- Screens and tailored interventions should be administered and delivered in settings where youth already spend time (e.g., home in early childhood, school in middle childhood/adolescence, pediatric primary care throughout development).
- Although several research trials have used brief parent-report screens to detect risk for behavior problems in early childhood, additional research is needed to validate and scale these screens for use in primary care, childcare, and preschool settings.
- In schools, brief, teacher-report screens assessing risk for mental health difficulties facilitate rapid assessment and service delivery. Teacher training that provides rationale for universal screening is advisable to promote acceptability.
- Youth self-report screens designed to assess risk for antisocial behavior (e.g., substance use, conduct problems) among school age children should emphasize contextual risk factors and predictors of future problems (e.g., tolerance of deviance) rather than querying the problem behaviors directly, to promote acceptability.
- Some promising approaches to universal screening use administrative data to predict child maltreatment, thereby circumventing barriers to data collection.

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CHAPTER 5

Investing in Novel Intervention Delivery Systems

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Investing in Novel Intervention Delivery Systems

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BOTTOM LINE

- The traditional long-term, face-to-face healthcare system comes with several financial, temporal, and geographical access problems.
- Access barriers are often exacerbated for individuals with marginalized identities, who also face unique access barriers (e.g., cultural stigma; provider discrimination).
- Novel delivery approaches (e.g., brief, digital, self-guided, and/or automated) can mitigate many traditional barriers, increasing access to needed support.
- Many of these approaches have already demonstrated positive effects on mental health difficulties (e.g., depression; anxiety; harmful substance use; posttraumatic stress), as well as physical health difficulties (e.g., insomnia; cardiac problems). Some interventions may improve both mental and physical health outcomes simultaneously.
- Newly developing technology might also produce efficacious, accessible interventions.
- Existing novel-delivery interventions should be disseminated widely when possible, and we should simultaneously invest in the development and testing of novel-delivery interventions that are tailored to marginalized communities.

Mental health interventions, while often efficacious, have an access problem. Many structural barriers impede the ability of individuals to obtain therapeutic services (e.g., time commitment, cost, limited provider availability, and stigma against mental health difficulties and getting support; Schleider et al., 2020). Some barriers are particularly exacerbated in marginalized communities. For example, LGBTQ+ youths whose parents are unsupportive of the youth’s identity may find it challenging to obtain the parental permission necessary for traditional, face-to-face therapeutic support (Andrilla et al., 2018). Relative to White individuals, Black and Hispanic individuals are less likely to have health insurance (Radley, 2021), making it more difficult for them to afford therapeutic services. These and similar problems highlight the need to increase population-level access to therapeutic support. By using novel intervention delivery methods within a *primary mental health care approach*, we can do just that.

Established Alternative Delivery Systems

With more than one-third of U.S. counties lacking access to a psychological provider (Andrilla et al., 2018) and with limited transportation access to the providers that are geographically available (Oluyede et al., 2020), digital and automated interventions may increase access to therapeutic support (Schleider et al., 2020). More than 90% of the U.S. population has access to the Internet (U.S. Department of Commerce, 2021). In low- and middle-income countries

(LMICs), 80% of the population owns a cell phone, and almost half can access the Internet (World Bank Group, 2016). Automated interventions can often be accessed at low or no cost, mitigating the financial access barrier (MacDonell & Prinz, 2017).

With 80% of the global population living in LMICs, where access to traditional therapeutic support can be particularly limited (Fu et al., 2020), disseminating accessible and useful interventions could address a range of global mental health problems. Fortunately, in LMICs, digital interventions have improved mental health difficulties such as depressive symptoms, harmful substance use, anxiety, and posttraumatic stress (Fu et al., 2020).

Digital interventions show promise for marginalized communities. Those adapted for sexual minority youths can reduce anxiety, depression, hopelessness, substance use, and identity-specific outcomes (e.g., internalized homophobia; Hobaica et al., 2018). Those adapted to racial minority populations can reduce substance use, depression, anxiety, and traumatic symptoms (Ellis et al., 2022). Even some non-community-tailored interventions might benefit marginalized and nonmarginalized youths equivalently (McDanal et al., under review).

Online Interventions

Digital intervention delivery methods take many forms, including by the Internet, mobile apps, and text messaging.

Self-guided online interventions can be completed anonymously, which helps address the problem of possible provider discrimination (MacDonell & Prinz, 2017). Additionally, they may not require parental permission, particularly benefiting youths whose caregivers are unsupportive of the youth receiving therapy (Schleider et al., 2020). Brief online interventions help alleviate the time commitment barrier seen with traditional long-term therapy (Schleider et al., 2020). Notably, online interventions delivered in as little as one 30-minute session can reduce depression, anxiety, hopelessness, restrictive eating, self-hate, and conduct problems in youths, with some of these effects remaining present at a 3-month follow-up (Schleider & Weisz, 2017; Schleider et al., 2020; Schleider et al., 2022).

Online interventions yield a medium effect size, comparable to that of traditional, face-to-face interventions (Barak et al., 2008). Online interventions appear to be most useful for anxiety, panic, and posttraumatic stress, and they are also helpful for depression, substance use, and negative body image (Barak et al., 2008). Online interventions may also enhance physical health-related outcomes, such as eating, sleeping, and exercising behaviors (e.g., Clarke et al., 2019; Lee et al., 2023; Walsh et al., 2016). Some interventions that target health behaviors (e.g., insomnia interventions; cardiac rehabilitation interventions) have simultaneously shown positive effects for anxiety and depression (Lee et al., 2023; Varnfield et al., 2014). Given the notable comorbidity between

physical and mental health problems (Doherty & Gaughran, 2014), it is perhaps unsurprising that digital interventions show promise for reducing comorbid physical and mental health symptoms.

MOBILE APP-BASED INTERVENTIONS

Mobile apps show promise as another delivery method. Mental health apps with demonstrated utility in reducing, for example, depression, anxiety, and stress, are informed by evidence-based therapeutic strategies; these techniques derive from approaches such as cognitive behavioral therapy, cognitive control and problem-solving therapy, and acceptance and commitment therapy (Rathbone & Prescott, 2017). Moreover, digital health apps have shown promise for improving physical health outcomes such as exercise behaviors, eating behaviors, and chronic disease risk (Lee et al., 2018).

TEXT MESSAGING-BASED INTERVENTIONS

For those who don't have Internet access, some interventions can be delivered through text messages (SMS). SMS interventions have led to reductions in depression and increases in quality of life (Watson et al., 2016). When combined with telephone contact, SMS interventions have also led to decreases in psychotic symptoms and in broader transdiagnostic (cross-disorder) psychopathology (Watson et al., 2016).

RECOMMENDATIONS

- Online and app-based interventions currently show the strongest evidence base and are ready to be disseminated in high-income countries and LMIC countries alike.
- SMS-based interventions may be the most accessible digital format, particularly in LMICs, and they should be disseminated to those without Internet access.
- Digital interventions frequently show positive impacts on depressive symptoms, anxiety symptoms, and harmful substance use. Digital interventions also show promise for improving physical health outcomes.
- The utility of digital interventions should be assessed for additional, relatively understudied mental health difficulties, such as personality disorders (or using more recent terminology, unstable emotional/interpersonal psychopathology).
- When available, community-tailored digital interventions should be disseminated to marginalized groups. With additional funding, the feasibility, accessibility, and efficacy of these interventions can be further assessed and established.
- It may also be worthwhile to disseminate more widely available generalized digital interventions if they show utility for these groups.

Promising New Delivery Approaches

In addition to more established interventions, newer technologies—such as interactive voice response technology

and machine learning—might yield promising effects. However, studies in these areas are quite few in number; these are reviewed below.

INTERACTIVE VOICE RESPONSE TECHNOLOGY

One promising new phone-based intervention approach uses interactive voice response (IVR) technology. With IVR, individuals respond to preprogrammed survey questions about mood and behavior during automated phone calls (Corkrey & Parkinson, 2002). The IVR intervention then delivers personalized and automated phone-based feedback, where user scores are matched to preprogrammed scripts that provide, for example, information about potential mental health stressors or encouragement to engage in coping strategies (Andersson et al., 2017). IVR as an intervention may reduce stress, substance use, anxiety, and it may improve quality of life, though evidence is tentative and not universal (Andersson et al., 2017; Andersson et al., 2020; Byonanebye et al., 2021). Aside from the referenced studies, the use of IVR as an intervention is relatively unexplored.

MACHINE LEARNING

Recently, machine learning algorithms are being used to personalize interventions to a specific user. For example, one mobile-based intervention generates predictive models of an individual's mood, cognitive states, behaviors, and environmental/social contexts. In a study on this intervention involving eight participants, anxiety and depressive symptoms decreased from pre- to postintervention. Notably, the predictive models did not actually lead to modifications of the intervention, but rather were used to display personalized feedback graphs for participant self-reflection (Burns et al., 2011).

In contrast, one study used a class of machine learning models called "recommender systems," which take advantage of collective user information to generate personalized output that can inform the content of an intervention delivery system. In this study, the algorithm in the recommender system was used to tailor the content of daily smoking-cessation-targeted e-mails sent to each individual participant; the model incorporated explicit participant ratings of the messages, website visits after viewing messages, demographic information, and smoking-related perspectives. In a comparison between this machine learning-based delivery system and a standardized system based on a smoker's readiness to quit, a greater proportion of participants in the machine learning-based delivery system condition reported an intent to quit, and the increase in the proportion of participants who reported already quitting was also greater; however, these results were not statistically significant. With only 89 participants completing the study, a trial with a greater sample size may help clarify whether the

machine learning-based method has any meaningfully greater effect than a standardized computer-tailored system (Sadasivam et al., 2016).

Another machine learning approach, called "reinforcement learning," has been applied to physical health outcomes with promising results. In the reinforcement learning approach, the algorithm uses a given individual's behavior in response to different stimuli to gradually learn which stimulus prompts the most optimal response for the given individual. For example, one study team used a reinforcement learning algorithm to learn which types of automated feedback messages were most likely to increase a given participant's physical activity levels, estimated based on each user's changes in physical activity data following different feedback messages. Participants in the personalized feedback message condition increased their physical activity levels more so than participants in the untailored message condition (Yom-Tov et al., 2017).

Another study used a sensor-driven machine learning algorithm to build an "intelligent" mechanism of mobile phone push notifications designed to enhance stress management. Based on the frequency of a given user's response to initial push notifications at different times, the timing of message delivery was personalized in an effort to enhance the individual's engagement with the intervention. In other words, after learning at which times in the day a user was more likely to respond, the system would "intelligently" deliver future messages at those times in aim of maximizing future participant likelihood of response. However, there were no significant differences in participant engagement between the "intelligent" message delivery condition and the standard delivery condition (Morrison et al., 2017).

Conclusions

In several cases, delivery systems that diverge from the traditional long-term, face-to-face intervention approach have already demonstrated effectiveness for a variety of mental difficulties, most notably in the cases of online and mobile app interventions for anxiety, panic, and posttraumatic stress. Some evidence suggests that online and mobile app interventions can also positively impact other mental and physical health difficulties (e.g., depression; harmful substance use; negative body image; eating behaviors; sleeping patterns, physical activity levels; and cardiac problems), including some emerging evidence for improving both mental and physical health challenges concurrently. Text-messaging systems, which are perhaps most accessi-

ble for those in low- and middle-income countries, show promise for mitigating psychotic systems and broader transdiagnostic psychopathology. Newer approaches based on interactive voice response (IVR) technology and machine learning approaches may yield positive effects on problems such as anxiety and depressive symptoms, smoking behaviors, and physical activity levels; however, the evidence base for these more recently developing approaches is sparse, and some of the existing studies have shown mixed results.

In all, given:

1. the generally promising effects found for novel delivery systems, such as those that are delivered online, in apps, through text messages, and even potentially

through IVR and machine learning approaches;

2. the evidence suggesting that brief, self-guided, and/or automated interventions are not only effective, but also more accessible than traditional delivery approaches; and
3. the probability that these novel delivery systems can improve both mental and physical health challenges, potentially simultaneously,

dissemination of the most promising alternative intervention delivery systems, as well as continued study of the more recently emerging approaches, will serve to increase access to effective supports for mental and physical health at the population level.

RECOMMENDATIONS

- Additional research can illuminate the potential utility of novel technologies, such as interactive voice response and machine learning, in personalizing intervention delivery.
- In the meantime, nonpersonalized delivery systems (e.g., standardized online interventions) have stronger and more consistent evidence. Because these delivery methods have already demonstrated utility, their prompt dissemination is key.

EMERGING LITERATURE & REMAINING GAPS

- Key areas for further exploration include: personalized delivery systems using novel technology; development, utility, and dissemination of community-tailored interventions; modifications to improve the potency of SMS-based interventions; interventions for less frequently studied mental or physical problems; and interventions designed to target comorbid mental and physical problems simultaneously.

THOUGHT & ACTION QUESTIONS

- How can we best balance disseminating the most accessible interventions with disseminating the most useful interventions?
- To what extent should we focus on tailoring interventions to specific marginalized communities vs. tailoring interventions to specific individuals?
- To what extent should we invest in developing new technologies vs. optimizing technologies that are already well established?

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CHAPTER 6

Promoting Physical Activity and Exercise to Improve Mental and Physical Health and Well-Being

ALAN E. KAZDIN, PHD

Promoting Physical Activity and Exercise to Improve Mental and Physical Health and Well-Being

ALAN E. KAZDIN, PHD

BOTTOM LINE: KEY FEATURES OF PHYSICAL ACTIVITY AND EXERCISE AS AN INTERVENTION FOR POPULATION HEALTH

- Physical activity and exercise have benefits that are very well established in research. The benefits include those related to mental disorders (e.g., symptoms of many psychiatric disorders including depression and anxiety), mental health more generally (e.g., subjective well-being, quality of life), and physical health (e.g., morbidity and mortality and scores of physical health symptoms).
- Physical activity and exercise can take on many forms to accommodate individual preferences over the span of one’s life and across cultural, ethnic, and geographical conditions.
- The intervention can be used without a special trained professional of any kind or special equipment or facilities.
- Enormous resources exist online, on the web, and in the form of free “apps” that can be used to guide physical activity and exercise, set goals, monitor progress, and provide encouragement. These are age adjusted, or can be so, to appeal to features of the population (e.g., age, ethnicity, level of activity).
- Physical activity and exercise avoid the standard structural barriers (e.g., insurance, availability of a mental health professional, mental health setting) and attitudinal barriers (e.g., stigma, self-stigma, mental health illiteracy) that impede delivery of mental health services. Even so, there are disparities (e.g., ethnic, cultural) in the rates of engaging in physical activities and these need to be addressed with any intervention;
- Laws, policies, and practices in schools, the home, and workplace do not optimally support engaging in physical activity. When they do, physical activity is increased; and
- Multiple sources of influence (e.g., message framing, choice architecture, the media, influential “media” figures, social networks) could be mobilized to better model, encourage, foster, and support physical activity and exercise in the nation’s youth.

Overview

Physical activity refers to engaging in movement or action that is sustained for a specific period of time. Over the years, what constitutes health-promoting physical activity has expanded well beyond exercising. Both structured activities (e.g., games, sports, exercise classes) and unstructured activities (e.g., going for walks, doing household chores, gardening) are included among the physical activities that have many beneficial effects. To reap the key benefits, recommendations suggest engaging in physical activities a few times a week and of a specific duration. For example, in the United States, the recommended weekly dose for adults is 150 minutes of moderate-intensity physical activity with at least 2 days of muscle strengthening activity. However, the health beneficial effects are achieved with much less time.

Physical activity has been studied over a period spanning decades (please see References). Spanning multiple studies, exercise has been shown to reduce the symptoms of anxiety disorders, including obsessive-compulsive disorder, affective disorders, eating disorders, substance use disorders, schizo-

phrenia/psychosis, and cognitive impairment and to improve quality of life and feelings of subjective well-being. For example, a recent meta-analysis showed significant benefits of physical activity in reducing clinical depression. The benefits were especially marked among those who had not previously engaged in physical activity, but the benefits were not limited to this group. The authors estimated that if individuals who had not engaged in exercise began an exercise regimen, this would reduce the prevalence of the disorder by 11.5%. Interestingly, minimal amounts of physical activity were beneficial below (e.g., ½ half of) the recommended standards.

Strengths

There are special features of physical activity as an intervention for mental health and well-being:

- The range of activities that “count” as exercise is vast. Among the consequences, one can engage in activities in one’s home, at school, or at work and by oneself and

with others. Also, over the course of a person's week or life, one can change activities and still be involved in physical activity.

- The benefits have been demonstrated across the age spectrum (e.g., children, adolescents, adults, older individuals). Thus, physical activity can be lifelong, but the benefits accrue when they begin at any age.
- Opportunities for exercise can be integrated in multiple settings (e.g., preschools and schools at all levels, the workplace, assisted-living facilities).
- Physical activity has broad benefits beyond mental health. Large-scale studies have shown that physical activity reduces the risk, onset, and severity of many physical disorders and medical conditions (e.g., cancer, hypertension, diabetes) and morbidity and mortality (e.g., cardiovascular disease, all-cause mortality).
- Physical activity is a highly scalable intervention because it does not require specially trained professionals or special equipment or facilities. Also, the intervention can reach individuals and settings that are routinely underserved in relation to traditional mental health services. Many online, web-based, and applications (apps) are readily available and without cost. These can provide a virtual coach or trainer, provide encouragement, monitor progress, and help with goal setting for individuals who would like assistance. Other technologies that are currently available (e.g., virtual reality games that require physical activities, smartwatches to monitor activity) also can support physical activity and exercise;
- For children and adolescents, physical activity can be made to be "fun" or "cool" by drawing on technology and age-related attractions, social media, and music;
- The intervention avoids many of the structural barriers (e.g., lack of insurance, limited availability of a mental health professional or setting) and attitudinal barriers (e.g., stigma, self-stigma, mental health illiteracy) that routinely limit utilization of mental health services; and
- Physical activity is likely to be acceptable to the public at large because many of the activities (e.g., walking, jogging, bicycling) are already recognized as part of everyday life, whether one engages them or not. Physical activity is recognized as part of self-care in general and not a specific "treatment" for mental disorders.

Limitations

Apart from the special features of physical activity, there are qualifiers worth noting.

- The scientific research has emphasized the benefits of physical activity with adults, although there certainly is evidence related to children and adolescents including reviews and meta-analyses. Yet, engaging adults (e.g., parents and relatives) in physical activity is likely to be one of the best ways of developing the habit in children as well.
- Physical activity is not suitable for everyone, in terms of interest or physical ability. Individuals with various chronic physical conditions or disability may require special activities to accommodate their situation. Even so, the vast range of options that constitute physical activity and the wide age range that can be accommodated are clear advantages.
- The opportunities are quite varied in terms of facilities (e.g., parks with exercise equipment) but even seemingly readily available opportunities (e.g., going for walks, jogging) are not feasible or safe in areas of many cities.
- There may be unique barriers among children and adolescents. For example, one barrier to participation in exercise among adolescents is poor body image, low self-esteem, and concerns about peer reactions during exercise at school. However, such barriers might be mitigated with apps and exercise regimens available online and for private use in one's home.
- Although rare, physical activity and exercise can have deleterious effects. Overexertion, exhaustion, and excessive exercise can lead to physical harm. However, the weight of the evidence and recommendations suggest that physical activity and exercise are safe for the vast majority of people.

Needed Next Steps

Physical activity has long been recognized to be a first line of attack in the promotion of physical and mental health. National and international government and nongovernment agencies have provided guidelines, toolkits, and best practices for schools, communities, and businesses. Despite major efforts, there is consensus that prevalence of minimal levels of physical activity is still low. For example, a large-scale survey in the United States spanning 1998 to 2018 indicated that the proportion of adults meeting recommended activity guidelines increased from 26% to 37%, with much lower percentages for ethnic minority groups. As for youth (ages 6–10), 24% engage in recommended levels of physical activity. For both youth and adults, there is considerable room to improve the rates of physical activity.

A common practice for fostering lifestyle changes derive from government and nongovernment agencies is to make recommendations and highlight various practices and their benefits. The low cost and ease of dissemination make information-based interventions very attractive. However, informational and educational appeals often are weak in terms of the number of individuals they change and the durability of the changes. Such messages could draw much more heavily on findings from psychology to increase their impact (e.g., the use of message framing, social norming, nudging, choice architecture, use of social network leaders).

There are many other interventions that could promote physical activity. The use of technology can and already does play a critical role in lifestyle practices. “Apps” and wearable devices (e.g., wrist bands, smartwatches) might give messages but also animated figures or even interactive video and virtual games that involve physical activity could promote physical activity. The challenge is what can be mobilized to foster engaging in physical activity and exercise more routinely than is currently the case.

Certainly, access to activities and incentives to use them can be better aligned. For example, in the United States, many states have laws require some level of physical education (activity) in elementary school through the 12th grade. The laws vary in what is required and research shows that the extent of physical activity of youth is highly related to the level of activity required by those laws. States with few or minimal requirements tend to have significantly lower rates of exercise among school children. This is ironic for other reasons, including findings that physical activity of youth is associated with improved academic performance and attendance.

Apart from interventions emanating from government and health care agencies and resources, more could be done culturally by mobilizing other domains of influence. For example, consider the widespread viewing of movies in the home. Physical activity and exercise might play a role in background activities that are not at all part of the plot. Strategic placement of activities is not a departure from what many movies do by strategically placing branded products (e.g., various named beverages and food, airlines). A united cultural front in which mental-health-promoting activities were more ever-present might have a synergistic effect. This would mobilize government and nongovernment agencies and cultural groups to move toward the shared goals of improving mental and physical health.

Concluding Comments

The main conclusion is that physical activity and exercise are extremely well studied interventions with consistent benefits in mental and physical health. More is needed to promote physical activity in special ways that are likely to be child and adolescent friendly. Among the obvious options to better promote activity among our youth would be using technology to provide engaging games and activities, drawing on superheroes and cultural icons, and engaging corporations and businesses that appeal to children and adolescents. However, the “power” of psychology has not been fully deployed in the way of interventions that can be expected to change behavior (e.g., rather than just knowledge and attitude). Interventions from many domains within learning (e.g., applied behavior analysis), cognitive psychology (e.g., choice architecture), and social psychology (e.g., social networks) could be much more systematically deployed).

Physical activity and exercise are interesting because we have a ready-to-go evidence-based intervention. The challenges are two-fold. First, it will be important to devise ways to increase adoption among children and adolescents and in the settings in which they function (e.g., schools, parks). Second, it will be important to monitor at a national level the engagement in physical activity and whether any interventions are in fact improving adoption. Monitoring impact in adoption and eventually mental health are as essential as the interventions themselves.

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CHAPTER 7

Advancing Lay Provider-Delivered Interventions

KIM HOAGWOOD, PHD AND MARY ACRI, PHD

Advancing Lay Provider-Delivered Interventions

KIM HOAGWOOD, PHD AND MARY ACRI, PHD

BOTTOM LINE

- The term “lay providers” refers to a broad category that includes community health workers, peers, certain types of health providers, natural helpers, family associates, family peer support specialists, and paraprofessionals, among others.
- Lay providers of whatever type all share a certain characteristic, namely that they have “lived experience.” This means that they have direct and personal experience with the issue, illness, or situation in which they are providing services. Lived experience is thought to foster credibility, engender trust, enhance treatment adherence, and facilitate engagement in services.
- There are very few mental health prevention programs delivered by lay providers, with a notable gap in adolescent/young adult lay provider-delivered models.
- The scientific literature is strongest for family strengthening prevention programs, health models, and for postpartum depression. Less common are programs that focus on reducing child emotional and behavioral problems and substance use.
- Most programs target the parent/caregiver largely through the provision of educational/informational support about parenting, child health and development, mental health and community resources, and instructional support, with an emphasis on parenting skills. Several programs provided emotional and affirmational support, akin to a friendly visitor. Less frequently, instrumental supports including childcare, a cookbook and pedometer to encourage healthy weight, mattress and pillow covers and cleaning supplies to reduce allergens that contribute to asthma were offered.
- Settings include homes, schools, hospitals and community settings. Several multi-component programs offer individual services in the home, coupled with group services offered in the hospital or community setting. Programs were delivered primarily in person, although several programs also provided services via phone.
- Some of the studies used rigorous research designs. There are a handful of systematic reviews and meta-analyses, particularly for home visitation and patient/service navigation.
- Outcomes focused mainly on the child and/or parent and include increased knowledge and skills; decreased mental health and health symptoms; engagement and attendance in health and mental health services; and family functioning.
- A small number of studies focused on the cost effectiveness of lay provider-delivered programs.
- Findings were strongest for family strengthening prevention programs; mixed results found for health interventions and postpartum depression.

Mental health preventive interventions have a strong research history (Barrera and Sandler, 2006), particularly within the area of children’s mental health (Rishel, 2007). Given half of mental health disorders originate before the age of 14 (Colizzi et al., 2020; Kessler et al., 2005), intervening during childhood can have a significant impact upon the individual and reduce societal burdens associated with untreated mental health needs (Kieling et al., 2011; Otto et al., 2021). There are dozens of well-tested prevention programs with a long history of scientific attention across settings, including early childhood programs, schools, primary care, home visitations, and community-based services (Durlak & Wells, 1997; Greenberg et al., 2001; Han & Weiss, 2005; Olds, 2006; Spoth et al., 2008). Most of these interventions are delivered by trained professionals, such as teachers, nurses, psycholo-

gists, and social workers. Fidelity to the model and thus achieving intended outcomes is thought to depend upon delivery of the program by a highly trained and professional workforce. In recent years, influenced in part by global mental health initiatives and the concept of “task-shifting,” there has been interest in using lay providers to collaboratively deliver child mental health prevention programs (Hoagwood et al., 2010; Prinz et al., 2001; Spoth et al., 2002, 2007). This has been spurred by workforce shortages and rampant service needs in seriously underserved communities, including low-income and low- and middle-income countries.

The purpose of this synthesis is to provide a high-level review of the literature about lay providers, including classifying the services they provide; summaries of different types of preventive interventions; the degree to which programs deliv-

ered by lay providers are ready for scaling; and promising directions. This chapter follows the Institute of Medicine’s categorization of interventions as (1) universal, including population-based programs to prevent the onset of mental health problems; (2) selective programs that target children and adolescents with one or more risk factors (e.g., parental divorce); (3) indicated programs for youth with mental health symptoms but do not meet criteria for a diagnosis; or (4) treatment programs for children and/or families of youth with a diagnosable mental health disorder (Springer & Phillips, 2007).

Terminology and Qualifications of Lay Providers

The term lay provider is a broad category that includes community health workers, peers, lay health providers, natural helpers, family associates, family peer support specialists, and paraprofessionals (Cavaleri et al., 2011). A common prerequisite of lay providers is having had lived experience,

such as being a member of the targeted community, sharing the language, ethnicity, gender, mental health problem, or socioeconomic status of the targeted population (Acevedo-Polakovich et al., 2013; Barnett et al., 2021; Chakawa et al., 2022; Hoagwood et al., 2010). The lay provider’s lived experience is believed to foster credibility, engender trust, enhance treatment adherence, and facilitate the caregiver’s engagement in services (Gyamfi et al., 2010; Hoagwood, 2005; Koroloff et al., 1994; Osher et al., 2008).

LAY PROVIDER-DELIVERED SERVICES AND SUPPORTS

A synthesis of family support interventions conducted in 2010 identified five primary types of support (Hoagwood et al., 2010). Originally designed to capture family support components delivered in child mental health interventions, this service typology has since been extended to lay provider-delivered prevention programs (Cavaleri et al., 2011). Table 1 provides an overview of core services delivered by lay providers.

TABLE 1: CORE SERVICES	
Category	Definition
1. Educational/Informational	Information about child behavior, mental illness, treatment options, resources
2. Instructional/Skill Development	Skills for caregivers such as communication, problem-solving, and crisis management
3. Emotional Support	Promoting caregivers’ feelings of being affirmed and understood
4. Instrumental Support	Concrete services including respite care and transportation
5. Advocacy Support	Information about parental rights and resources, and leadership skills to enable caregivers to advocate at policy and service system levels.

Research Evidence

INCLUSION CRITERIA

A systematic review of all interventions delivered by lay providers was beyond the scope of this chapter; thus, the focus

was on interventions that included individuals with lived experience relevant to the intervention or program being delivered or examined. Accordingly, programs were included if they were (a) designed to be delivered specifically by lay providers, or (b) implemented by a range of staff, including

lay providers. Programs that were delivered by different workforces and not specific to lay providers are denoted in Table 2. Finally, programs that were not solely delivered by lay providers, such as team-based, multicomponent approaches, are also identified in the Table.

RESULTS

Published lay provider-delivered mental health prevention programs are uncommon, necessitating a broader survey and extension into health and substance use studies. The evidence is most plentiful in three areas: (1) Family Strengthening, (2) Health Prevention and Intervention, and (3) Postpartum Depression.

Family Strengthening Prevention Programs

These programs target families at risk for adverse child health and mental health outcomes including child behavior problems, poor child development, and maltreatment. Most offer instructional support, with an emphasis on parenting skills but also including communication, coping, and problem-solving skills; educational/informational support about parenting, child health and development, mental health; and emotional support. These programs primarily focus on the parent/caregiver and are delivered in the home. Several studies used rigorous research designs, comparing the intervention with a comparison or control group. Results were favorable as a whole, with greater gains in the intervention condition regarding child outcomes (e.g., internalizing, externalizing mental health symptoms; attendance at well child care visits and completing immunizations) and more mixed results regarding aspects of child development (growth and development); caregiver/parent outcomes (e.g., mental health symptoms, parenting practices and intimate partner violence), and family-level outcomes (perceived family dysfunction).

Health Prevention and Intervention

Lay provider-delivered health programs are common, particularly for families of children with asthma, diabetes, obesity, and premature delivery and failure to thrive. Programs target the parent/caregiver heavily focus on the provision of education about the child's medical illness or health condition, child development, healthy behaviors) and emotional support, and are delivered in the home (in person or by phone). Several programs target families disadvantaged by poverty. Studies primarily consist of RCTs, and results are

mixed, with several studies showing no between group differences, particularly regarding child outcomes (weight/obesity, growth as measured in weight to age, weight to height, and height to age ratios). Parent/caregiver outcomes tend to be more favorable, particularly in respect to mental health (depression, anxiety and stress).

Postpartum Depression

Programs to prevent the onset of postpartum depression typically focus on women during pregnancy or the postpartum period (prior to the child's first birthday) who are experiencing depressive symptoms but who do not have a diagnosis. These programs are often delivered by peers who have experienced and recovered from postpartum depression (along with additional criteria that varies across studies). Programs are typically brief (e.g., 12 weeks in length), and offer information about postpartum depression, infant development and wellness; and emotional support. Amani et al (2022) offered a unique program in that mothers were taught cognitive-behavioral strategies by peers to reduce depression. Results favored the intervention in two of the studies on key outcomes including depressive symptoms, and in one study gains were maintained at 6 months' follow-up. In one study, costs were calculated and found to be mainly equivalent for participants in the intervention and comparison groups. The third study found improvements in parental depression, perceived social support, and maternal/infant interactions in comparison to the control group, which the authors suggest provides evidence against lay provider-delivered home interventions to reduce PPD (Letourneau et al., 2011). Tables 2 and 3 summarize the evidence.

TABLE 4: PROGRAMS READY TO SCALE AND GAPS IN THE LITERATURE

- Findings for family strengthening prevention programs delivered at school, in the home, or/and in the community are strong. However, models for integrating lay providers into their delivery are still largely untested and should be a priority, especially programs that include multiple tiers or components as they may reach more children and address different levels of risk.
- In health programs, the evidence supports lay providers independently delivering a range of services including cognitive-behavioral and parenting strategies, information, and emotional support. These results support broadening the role of lay providers in prevention efforts.
- Programs to reduce postpartum depression are mainly favorable and have the potential to reduce depression, anxiety, and other threats to the mother and child. Although slightly more costly than usual care, the impacts of these programs could yield additional benefits and savings to the child.
- Several gaps are notable, including the overall lack of lay provider-delivered prevention interventions, prevention programs for adolescents, programs to address common mental health disorders such as depression, and models delivered by and intended for adolescent/young adults.

TABLE 5: THOUGHT & ACTION QUESTIONS

- Lay provider-delivered programs have been delivered in different settings. However, these programs are often siloed within the systems that govern their delivery (e.g., health, home-based, mental health, schools). What implementation challenges would need to be addressed in order to integrate them across child-serving systems?
- Lay providers share certain characteristics; however, the mechanism by which their work impacts positive outcomes is unknown. What might be the possible mechanisms of action?
- What other qualifications, training, and experiences should lay providers have to serve in this role?
- How can the field move towards a centralized theory of why lay providers are believed to have unique benefits in addition to having shared experiences?
- How can lay providers be best integrated into professional teams? What types of supports would they need, including training and supervision? What might the other team members need in order to partner effectively with lay providers?

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*Note: Studies included in the table indicated with an asterisk

TABLE 2

Source	Program Name	Prevention Type	Description
Family Strengthening Prevention Programs			
Barlow et al (2015)	Family Spirit	Selective	Consists of 41 lessons lasting approximately 1 hour in length delivered in the home to pregnant women or mothers of children 0–3 years of age. Meetings occur weekly during pregnancy, biweekly until four months postpartum, monthly from 4–12 months, bimonthly from 1–3 years.
Bierman et al (2002) The California Evidence-Based Clearinghouse for Child Welfare (n.d.)	The Fast Track Project	Multitiered	A multicomponent prevention program for families of children 6–16 years of age who are at high risk for conduct problems. Components vary by age: elementary school youth components include a universal teacher curriculum (57 lessons), parent training groups, child social skills group (Friendship Group), home visits, academic tutoring, and Peer Pairing (classroom-based friendship component). Adolescents receive life skills component, parent/child group on development and school transitions, and individual services based on need. <i>Note: Team-delivered; paraprofessionals deliver tutoring and Peer Pairing only.</i>
El-Mohandes et al (2003)	Pride in Parenting	Selective	A 1-year, multicomponent program for new mothers, which includes home visits and groups (in the hospital) services as usual (e.g., hospital-based social services). In-home meetings held weekly from 0–4 months and then bimonthly, alternating with group meetings.
Jensen et al (2021) “Strengthen the “Family”	Sugira Muryango	Selective	A 12-session home visitation delivered over 10 months to reduce interpersonal partner violence, build a safe home environment, and encourage healthy early child development.
Puffer et al (2022)	Tuko Pamoja “We Are Together”	Multitiered	A multitiered prevention program for families of adolescents with universal group (family strengthening) and early intervention individual (family counseling) components. The group component spans across 18 hours; the individualized component is flexible regarding duration.
Shapiro et al (2018)	Triple P	Multitiered	Triple P is a multitiered family strengthening program; tiers vary respective to the child’s age range (children under 12, teens selective, indicated) and focus (e.g., universal prevention, Tier 1; versus treatment). Triple P is also available for Indigenous families, for families going through a separation or divorce, and for families of children with a physical disability. Number of sessions and format (e.g., group, family) varies by tier. <i>Note: Designed to be delivered by a range of providers, including lay providers.</i>
Smallegange et al (2016)	Home Start + Triple P	Multitiered	(a) Home Start: Once a week for four hours per week over 10–12 months; offers friendly social support to reduce crises through the provision of support. (b) Triple P Level 4: 5 group sessions, held weekly for 2.5 hours each week, in addition to 3 telephone consultations, for parents experiencing problem child behaviors or parenting difficulties. <i>Note: Team delivered; paraprofessional delivers Home Start Component.</i>
Williamson et al (2013)	Madres a Madres	Selective	Four session parenting program delivered biweekly over 2 months for immigrant Latina mothers.
Health Prevention and Intervention			
Black et al (1995)	Home Intervention		Weekly intervention delivered in the home over the course of 1 year to parents of a child with nonorganic failure to thrive.
Parker et al (2008)	Community Action Against Action (CAAA) Intervention		Nine in-home visits over the course of 1 year to reduce environmental factors for asthma.
Preyde & Ardal (2003)	Parent Buddy Program		Phone-based program for mothers of infants admitted to the NICU due to preterm labor.

Source	Program Name	Prevention Type	Description
Resnick et al (2009)	Communicating about Health, Exercise, and Eating Right (CHEER)		18 weeks on average; visits occurred in home, by phone, or in the community to reduce weight/obesity. No set number of sessions or duration.
Ross et al (2021)	ANDALE		A 10-week in-home program for Latino families (preschool children and their parent) to prevent child obesity.
Sullivan-Bolayi et al (2010)	Social Support to Empower Parents (STEP)		Flexible program to address diabetes, content driven by parent, no set number of sessions or duration.
Yun et al (2015)	The Community Outreach Prevention Trial (COOPT)		Patient navigation model consisting of 16 sessions delivered in the home for parents of children who are overweight or obese.
Postpartum Depression			
Amani et al (2021)	CBT for postpartum depression (PPD)		9-week, 2-hour per week CBT intervention for PPD among mothers of infants less than 12 months of age.
Dennis et al (2013)	Mothers Helping Mothers		Pakistan-based program for new mothers (gave birth within two with Postpartum Depression weeks) of a live birth who met clinical cutoff for depressive symptoms received telephone-based support. No set number of contacts or specific content described.
Letourneau et al (2011)	A Home-Based Peer Support Intervention		A 12-week intervention delivered in the home (based in Canada) for new mothers of infants under 9 months of age.
Emotional and Behavioral Disorders			
Hurley et al (2020)	Parent Connectors		Phone-based intervention (60-90 minutes per session) for parents of children with an emotional or behavioral disorder.
Venturo-Conerly et al (2021)	Shamiri "Thrive"		A four-week, weekly group for adolescents with depression and anxiety in Nairobi. Groups composed of 9-12 youth.
Substance Use			
Ayon et al (2014)	Educational workshop		1-hour educational workshop for Latino parents of adolescents to reduce risk of alcohol use.
Engagement and Outreach			
Chakawa et al (2022)	Bridging the Gap		Three phases: Phase 1 is a 20-minute contact with the parent to build a relationship and convey information about stigma and child mental health. Phase 2 consists of a psychoeducational workshop 2.5 hours in length. In Phase 3, the lay health worker contacts the parent again to provide additional information and support.

TABLE 2

Program Name	Services	Target	Setting	Lay Provider
Family Strengthening Prevention Programs				
Family Spirit	(a) Information about parental mental health. (b) Instructional (parenting)	Native American pregnant women or mother of a child under three years of age.	Home	Native Paraprofessional
The Fast Track Program	(a) Instructional (parenting, problem-solving for parent, social skills for child). (b) Informational (re: adolescent development for parent; employment opportunities for child).	Families of school-aged children 6-16 years of age at risk for conduct problems (symptoms of aggression)	Varied/based on component (e.g., school for classroom component; home for parenting).	Paraprofessional
Pride in Parenting	(a) Information about parenting infant health and development. (b) Instructional (parenting, coping) (c) Emotional support	Mothers living in poverty who received inadequate prenatal	Home (individual) Hospital (groups)	Paraprofessional care
Sugira Muryango	(a) Information about nutrition, infant health, community resources (b) Instructional (parenting, coping)	Parent of a child between 6 and 36 months old living in extreme poverty. Based in Rwanda.	Home	Coaches
Tuko Pamoja	(a) Information (psychoeducation economic health) (b) Instructional (communication, parenting, coping)	Based in Kenya-families of adolescents who are at risk (mental health, relationship)	Home (individual) Community (group)	Lay provider
Triple P	(a) Instructional (parenting)	Families of children (0-16) Universal or targeted to children at risk or who have behavioral, emotional, and/or developmental problems.	Varied: online, primary care, community.	Paraprofessional
Home Start + Triple P	(a) Instructional (parenting) (b) Emotional support	Parent of a child 0-7 years of age	Home (Home+Start) Not stated (Triple P)	Volunteer
Madres a Madres	(a) Instructional (parenting)	Parent of an elementary school-aged child	Home	Promotoras
Health Prevention and Intervention				
Home Intervention	(a) Instructional (problem-solving around individual, parenting, and child-related issues) (b) Information about child development and resources. (c) Emotional support.	Parent of a child under 25 months of age disadvantaged by poverty with nonorganic failure to thrive.	Home	Lay Worker
CAAA	(a) Information about asthma triggers, community resources. (b) Instrumental support (vacuum, mattress and pillow covers, cleaning supplies).	Parent disadvantaged by poverty with a child 7-11 with asthma.	Home	Community Education Specialist
Parent Buddy Program	(a) Emotional support	Mother of a child admitted to the NICU for a very preterm birth.		

Program Name	Services	Target	Setting	Lay Provider
CHEER	(a) Information about topics including reading nutrition labels, food shopping, exercise, healthy foods (b) Instrumental (e.g., cookbook, Pedometer).	Parent of an elementary school-aged child with a BMI > 85th percentile.	Home, community phone.	Community Health Worker
ANDALE	(a) Information about nutrition, healthy foods and physical activities. (b) Instructional support (problem solving) (c) Emotional support	Latino parent of preschool children	Home	Promotoras
STEP	(a) Information (varied) (b) Emotional support	Parent of a child under 13 years of age diagnosed with Diabetes Mellitus within the past year	Home	Parent Mentors
COOPT	(a) Instructional (parenting) (b) Information about nutrition, weight-related content.	Parent of a child 2-5 years of age who is overweight/obese	Home	Parent Navigator
Postpartum Depression				
CBT for Postpartum Depression (no specific name)	(a) Information about sleep, support, and other topics specific to PPD (b) Instructional (CBT strategies, including cognitive restructuring, behavioral activation, relaxation)	Mothers of an infant less than 12 months of age who met the clinical cutoff for depression	Community Center	Peers
Mothers Helping Mothers with Postpartum Depression (no specific name)	(a) Emotional support (b) Information; facilitate linkages to health services as needed	Mothers of a live birth (within 2 weeks of the birth) who was discharged from the hospital.	Phone	Peer volunteers
A Home-Based Peer Support Program (no specific name)	(a) Information about infant behavior, development, and interacting during feeding; postpartum depression (b) Emotional support (c) Instrumental support (childcare)	Mothers of children less than 9 months of age.	Home or phone	Peer volunteers
Emotional and Behavioral Disorders				
Shamiri	(a) Instructional (communicating gratitude, enhancing growth) (b) Information about personal growth (e.g., neuroplasticity)	Adolescents with depression and anxiety	School	Lay Provider
Parent Connectors	(a) Information about special education and school resources (b) Emotional support	Parent of a school-aged child with an emotional and/or behavioral disorder	School	Parent Connector
Substance Use				
Ayon et al (2014)	(a) Information about the cause of alcohol use, the role of adults in adolescent alcohol use, as well as the risks of alcohol use among youth and laws re: providing alcohol to adolescents.	Parent of an adolescent	Family Centers	Promotoras Housing Developments Community
Engagement and Outreach				
Bridging the Gap	(a) Information about stigma, child mental health and services (b) Emotional support	Black parent of a child 5-12 years of age in need of mental health treatment (parent-reported emotional or behavioral problems)	Community	Lay Health Worker

TABLE 2

Program Name	Lay Provider Inclusion Criteria	Study Design	Outcomes
Family Strengthening Prevention Programs			
Family Spirit	1) Members of the community 2) Bilingual (Native language) 3) GED or high school diploma 4) Two or more years of education or experience	RCT	Child: The intervention was associated with fewer internalizing, externalizing and dysregulating problems. Parent: The intervention was associated with greater parenting knowledge, locus of control, reductions in depression, externalizing problems, and illegal drug and marijuana usage.
The Fast Track Program	Not described	RCT	Child: Greater gains in the intervention group regarding behavior problems and protective factors (e.g., child involvement with deviant peers, social competence, although no significant improvement in school-based problem behaviors for Grades 4 and 5. Parent: Greater gains in the intervention group specific to parenting practices, parental warmth, positive involvement with the child, and harsh discipline.
Pride in Parenting	1) Parent/caregiver of a child 2) Knowledge of community weeks, frequency of well-care visits and services/resources 3) Personal characteristics (e.g., strong communication skills, warmth) 4) Has been employed Previously)	RCT	Child: Greater number of well-care visits initiated by six weeks, frequency of well-care visits and likelihood of completing the child's immunization schedule by 9 months among-families in the intervention arm.
Sugira Muryango	1) Members of the target community	RCT	Child: The intervention was associated with greater community improvements in problem-solving and communication. Measures to examine gross motor skills and social/personal conflicted re: results, showing greater gains in growth and development in one measure, but not in a second measure. Parent: Significantly greater reductions in intimate partner violence, father engagement, and parenting practices were found in the intervention group.

Program Name	Lay Provider Inclusion Criteria	Study Design	Outcomes
Tuko Pamoja	1) Members of the target Community	Pre/post	<p>Child: Improvements over time in mental health.</p> <p>Parent: Significant improvements over time in mental health, intimate partner violence, parenting, and alcohol-related problems.</p> <p>Family: Improvement in family dysfunction over time.</p>
Triple P	Not described		<i>Published results of the program delivered by paraprofessionals not located.</i>
Home Start + Triple P parenting	1) Volunteers without a formal degree in parenting support	RCT	<p>Child/Parent: Similar effects found in both conditions. (Triple P versus Home Start + Triple P) re: child behavior problems, caregiver well-being. Caregiver depression and child anxiety and ODD increased in the Home Start + Triple P condition.</p>
Madres a Madres	1) Female 2) Latina	RCT	<p>Child: Greater improvements in internalizing behaviors were shown in the intervention condition from pretest to follow-up.</p> <p>Parent: In comparison to WLC, greater gains were found in parenting skills.</p> <p>Family: Greater improvements in family support and organization among Intervention participants.</p>
Health Prevention and Intervention			
In-home intervention	1) Community knowledge 2) Experience with children and families 3) Personal characteristics (interpersonal skills)	RCT	<p>Child: No between group differences in weight to age, weight to height, and height to age ratios. Greater gains in the intervention group regarding receptive language; younger children evidenced greater benefit due to the intervention. No impact of the intervention upon motor development.</p> <p>Family: Greater child-focused home environment found in the intervention group.</p>

Program Name	Lay Provider Inclusion Criteria	Study Design	Outcomes
CAAA	1) Not explicitly stated, However, all of the community education specialists were from the targeted community.	RCT	<p>Child: Several measures of lung function improved in the intervention group; as a result, two symptoms were reduced, and in turn unscheduled medical visits and incorrect use of asthma medication decreased.</p> <p>Parent: Greater gains in reductions in parental depression.</p> <p>Family: Greater improvements in reducing dog allergens and lessening indoor asthma triggers.</p>
Parent Buddy	1) Parents of a very pre-term infant 2) Adjusted well to having a pre-term birth (based on a social work assessment)	Pre/post w/a control group	Parent: Greater improvements in caregiver stress, state anxiety, depression, and perceived social support were found amongst the intervention group. No significant differences between groups on trait anxiety.
CHEER	1) Not described	RCT	Child: No significant between group differences in BMI. BMI index decreased in both conditions (educational materials versus educational materials + Personal Encounters)
ANDALE	1) From the community	Pre/post/follow-up	<i>Feasibility and intervention completeness study.</i>
STEP	1) Parent of a child with diabetes 2) Personal characteristics (e.g., flexible, confident, works well with team).	RCT	Parent: No significant between group differences on parental concern, confidence and worry, social support, or impact on the family.
COOPT	1) Not explicitly stated; However, patient navigators were bilingual (Spanish)	RCT	<i>Published results not located</i>
Postpartum Depression			
CBT for Postpartum	1) History of postpartum depression; no longer symptomatic	RCT	Parent: Greater gains found in the intervention group regarding depression and anxiety, depression through six-month follow-up. No impact on social support parent/child relationship.
Mothers Helping Mothers with Depression	1) History of postpartum depression. 2) From the same geographic location/ethnicity based on participant preference.	RCT	<p>Parent: Greater reductions in depression amongst the intervention group versus usual care.</p> <p>Other: Cost per participant in the intervention group was \$4,497 versus \$3,380 in the usual care condition.</p>
A Home-Based Peer Support Program	1) History of postpartum depression; no longer symptomatic.	RCT	Parent: Greater gains in parental depression, social support, and maternal/infant interactions were found in the control group.

Program Name	Lay Provider Inclusion Criteria	Study Design	Outcomes
Emotional and Behavioral Disorders			
Shamiri	1) Community residents 2) Graduate of a high school in Kenya. 3) Between 18 and 24 years of age.	RCT	Child: In comparison to the study-skills comparator, the intervention was associated with greater reductions in depression and anxiety from pretest to follow-up and greater academic improvement from pre to post. No between group differences regarding social support or perceived control.
Parent Connectors	1) Parent of a child with an emotional or behavioral disorder.	Pre/Post	Child: Number of school-based mental health services, school attendance, and reading scores increased among intervention families. Family: Greater gains in family efficacy and empowerment in the mental health and educational system over time and versus the comparison condition.
2 RCTs			Child: Fewer school suspensions and greater school-based mental health services among the intervention group. Particular benefit for high-strain families regarding more receipt of school-based mental health services. Parent: Particular benefit for families experiencing high levels of strain, including enhancing self-efficacy and reducing strain.
Substance Use			
Educational workshop	1) Not specifically described; however, a control group generally described as lay providers who share the culture, language, and community of participants.	Pre/post w/o a control group	Parent: Significant gains in knowledge regarding the risks, rates, and effects of youth alcohol use from pre to posttest.
Engagement and Outreach			
Bridging the Gap	1) Not specifically described; however, generally described as lay providers who are from the same community as program participants.	Pre/post/follow-up	Parent: Stigma significantly decreased over time; help seeking did not change over time. Of 8 families reached at follow-up, 5 initiated mental health treatment for their child and the remaining 3 intended to initiate services.

TABLE 3:
Systematic Reviews

Source	Focus	Study Types	Outcomes
Munns et al (2016)	Family Strengthening (Home Visitation)	2 RCTs, 2 Qualitative	<p>Child: Two RCTs found gains in attending well child visits.</p> <p>Parent: Intervention gains include parenting attitudes and beliefs.</p>
Peacock et al (2013)	Family Strengthening (Home Visitation)	21 RCTs	<p>Child: Greater gains in home visiting programs regarding birth weight, weight to age ratio, health problems, and cognition and language development.</p> <p>Parent: Greater gains regarding parenting practices</p> <p><i>*Note: nonsignificant findings more prevalent than significant findings.</i></p>
Raphael et al (2013)	Health	17 RCTs	<p>Child: Greater gains in urgent care utilization, school absence.</p> <p>Parent: Gains include less workdays missed, increased quality of life.</p> <p>Other: One study found utilizing lay providers was cost-effective.</p>

CHAPTER 8

Leveraging Community-Based Infrastructures

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Leveraging Community-Based Infrastructures

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BOTTOM LINE

- Place-based initiatives, which focus on multisector collaboration to address concerns in a particular neighborhood or community, provide infrastructure for primary prevention of mental and physical health concerns. They can also include strategies to improve the interface between community resources and specialty mental health services. Community schools initiatives are one key place-based, youth- and family-focused approach that can be expanded through funding and improved evaluation.
- Structured organizational and community-level interventions, such as the ARC and Communities That Care models, can guide the development of community-based infrastructure for mental health. Drop-in, low-barrier mental health and social services access models have been disseminated successfully in many countries and can form a model for youth-focused approach to community mental health in the U.S.
- Community leadership and coalitions are key to the long-term success of establishing community infrastructure for population health; however, they are often not given the resources to center their expertise or the expertise of parent and youth leaders. To address this, support grassroots organizations and community-based organizations in developing logic models and outcome measures that will demonstrate the rationale and value of their programs. This approach can in turn build practice-based evidence for youth-led population health initiatives.

A population-based approach to youth physical and mental health care necessitates establishing community-based infrastructure to ensure access to primary, secondary, and tertiary prevention and intervention strategies in the settings where youth naturally spend their time. Community-based infrastructure can also extend the reach of formal health and mental health services, with the goal of reducing barriers to care and coordinating mental health care with other necessary services and resources.

What are the Key Elements of Community-Based Infrastructure for Mental Health?

Across conceptual models (Burgemeister et al., 2021; Jacobson, 2016; Moore & Fry, 2011), there is consensus that a population health approach to children’s mental health requires a focus on strategies that are: **multilevel**, meaning they address multiple levels of a child’s context and experiences, including the individual, family, and community levels; **multisector**, meaning they bring together a range of organizations and key partners focused on child and family health well-being; **integrated across service systems**, meaning that services are coordinated and work in conjunction with each other rather than in isolation; and **integrated across prevention and intervention areas**, meaning they strive to address multiple outcomes relevant to children’s well-being, rather than one issue or concern.

Specifically, the key elements of a community-based infrastructure for mental health may include: the physical infrastructure of neighborhoods and service delivery locations; the social infrastructure available to parents and children; the service system infrastructure spanning education, health, and social service sectors, among others; the available community resources; and the policies and practices that govern these systems, including those established by government partners, community coalitions, and other convening groups (Bell & McKay, 2004; Ferris & Hopkins, 2015; Moore & Fry, 2011).

Place-Based Initiatives Addressing Physical and Social Infrastructure

Place-based initiatives, which focus on multisector collaboration to address concerns in a particular neighborhood or community, are a key example of this community-based infrastructure. Moore and Fry (2011) describe the challenge as one of creating “joined-up solutions” for “joined-up problems,” with action “needed on three fronts simultaneously: building more supportive communities, creating a better coordinated and more effective service system, and improving the interface between communities and services” (The Centre for Community Child Health, 2010; as cited in Moore and Fry, 2011, p. 5 v. ii). Place-based initiatives are not a new phenomenon; various iterations of these have taken place

over the past 50 years in the United States, with funding for them having come from both philanthropy and government initiatives (Ferris & Hopkins, 2015). Some examples include federal initiatives through which funding is disbursed to states, including Promise Neighborhoods and Promise Zones.

However, despite enduring interest in place-based initiatives, challenges to evaluating their success have persisted. For example, a review of the effectiveness of place-based interventions in improving early childhood health and development found that 10 out of 11 studies reported at least one positive outcome; but these represented only 36% of the total of 83 outcomes reported (Burgemeister et al., 2021). Evaluations of multilevel, multisector initiatives that involve multiple interventions aimed at multiple outcomes (e.g., financial, educational, health) are by definition complex to design and carry out and are time and labor intensive (Burgemeister et al., 2021; Ferris & Hopkins, 2015; Moore & Fry, 2011). It is also unlikely that meaningful results can be observed in the short term; however, funding windows tend to limit the length of follow-up (Burgemeister et al., 2021). As a result, many initiatives have typically relied on evaluation of interventions at an individual level, rather than being able to show outcomes for a place-based initiative as a whole. Evaluations have also tended to focus on evaluations of smaller pilots, which are then seen as being limited in their

generalizability to larger scale initiatives and to other communities (Ferris and Hopkins, 2015).

Community schools are an example of a place-based initiative structure specifically focused on youth and with important implications for supporting youth mental and physical health. Community schools initiatives establish the school as a hub for school-based partnerships (Jacobson, 2016), with a community schools coordinator established as a key figure within the school community, a site leadership team consisting of both parents and key partners, and an array of service partners convened to provide comprehensive services. These services are meant to meet the needs of not only students, but the larger community surrounding the school. Many community schools initiatives have evolved over time to operate as part of a larger group of sites, with an intermediary organization coordinating their efforts. Sustainability of efforts can be a challenge and necessitates the braiding of funding from multiple sources; however, there are examples of community schools initiatives sustained over long periods of time, demonstrating the feasibility of this approach (Jacobson, 2016; Maier et al., 2017). Recently announced federal government priorities include scaling up high-quality community schools, implementing evidence-based practices for integrated student supports, and building the evidence base for effective community schools nationally (U.S. Dept of Education, 2022).

RECOMMENDATIONS

- To create effective infrastructure for population mental health, focus on multilevel strategies that join multiple sectors, integrate services across systems, and address multiple interrelated outcomes.
- Invest in place-based initiatives, including community schools models, as key approaches to develop common structures and processes to support community-driven goals for physical and social infrastructure.
- Prioritize funding and technical assistance for effective evaluation of these complex models in order to build an evidence base for approaches to establishing community infrastructure, including community-partnered research and intervention codesign.

COMMUNITY INFRASTRUCTURE FOR MENTAL HEALTH SERVICE DELIVERY SYSTEMS

Integration of formal mental health service delivery systems with community infrastructure can be an important strategy for improving mental health service access and outcomes. Local and community specific models for specialty mental health services that focus on reducing barriers to care and providing peer support are a promising approach to expand-

ing community mental health infrastructure (Glisson et al., 2010; Settapani et al., 2019; Colwell et al., 2012). For example, the Availability, Responsiveness, and Continuity (ARC) model was used to address lack of coordination between service sectors and youth access to services in 14 rural Appalachian communities with the goal of increasing uptake of Multisystemic Therapy (MST), an evidence-based practice. Youth receiving MST in ARC counties had significantly

lower problem behavior scores than those receiving MST in non-ARC counties (Glisson et al., 2010), demonstrating the potential of county-level systemic interventions to improve delivery of evidence-based mental health services. A study of ARC implementation in a midwestern city found that alignment of organizational priorities with the ARC intervention was the mechanism that resulted in improved youth outcomes within ARC agencies (Glisson et al., 2016).

Another example of a community-based approach is the development of Integrated community-based youth service hubs (ICYSHs) for youth ages 12-25 years, with models including Headspace and Orygen Youth Health in Australia, Jigsaw in Ireland, Forward Thinking Birmingham (formerly Youthspace) in the United Kingdom, Youth One Stop Shops in New Zealand, and YouthCan IMPACT, Foundry, and ACCESS Open Minds in Canada. A review of these programs found that nearly all models reported trying to develop nonstigmatizing, youth-friendly environments, and broad services categories, with mental health, drug and alcohol services, primary care, vocational or other social services, and peer support featured in several models. Evidence-based and brief, solution-focused interventions were promoted, but specific interventions, extent of their use and achievement of fidelity were rarely reported (Settipani et al., 2019). In the US, the models of Certified Community Behavioral Health Clinics (CCBHC) and school-based health centers may be approaches that can be used in a similar manner to address the needs of adolescents and young adults.

Community infrastructure for mental health also includes the delivery of programs developed to be delivered in community settings, address the needs of local communities, or integrate supports from other service sectors. The Communities That Care prevention strategy is a structured approach to developing a community coalition that learns to select evidence-based programs addressing risk and protective factors relevant to youth in their community, as well as how to implement programs, monitor fidelity, and assess youth outcomes (Oesterle et al., 2018). Studies following youth into adulthood find sustained gains in reducing substance use and violence (Oesterle et al., 2018), which are important outcomes for promoting long-term physical and mental health.

Other individually focused studies find evidence for tertiary, secondary, and primary prevention strategies integrating mental health with community-based supports. For example, in the area of **tertiary prevention**, specialized and targeted mental health training for clinicians treating

high-risk youth in a community setting is associated with decrease in mental health symptoms (Slesnick et al., 2016; Glisson et al., 2010; Colwell et al., 2012; Das et al., 2016). Lack of significant change in high-risk youth mental health symptoms was observed in tertiary interventions without specialized clinical training (Winiarski et al., 2020; Rijo, 2016). Community-based interventions that target externalizing behaviors are promising, but longitudinal study designs are warranted (Slesnick et al., 2016; Rijo, 2016; Glisson et al., 2010; Colwell et al., 2012). In the area of **secondary prevention**, individually administered cognitive restructuring and problem-solving interventions show promise for mood symptom reduction (depression, anxiety) among at-risk youth (Beardslee et al., 2013), while group modalities using sports, arts, and/or music therapy were not supported in reviews of the literature (Soltan et al., 2022; Richards et al., 2014). In **primary prevention**, psychoeducation and mental health promotion in a youth's environment (online, professional resource contacts and improving the mental health competency of surrounding workers) is associated with decreased depression symptoms (Székely, 2013; Das et al., 2016; Shaw 2021; Rasing et al., 2017; Clarke, 2015). Studies of integrated approaches to delivering multi-level prevention strategies to support early childhood development can inform scale-up of these approaches among adolescents. For example, Shaw, Mendelsohn, and Morris (2021) demonstrate the promise of a tiered model embedded in pediatric primary care to engage families and tailor more specialized interventions such as home visiting to those in highest need.

Place-based initiatives have emphasized the importance of community-led and community-designed programs; however, community involvement often focuses on adult leaders. Youth engagement as leaders should be a focus when developing community infrastructure for youth mental health. Codesigned and peer-led psychoeducation and mental wellness communication on multiple platforms (websites, mobile devices, community sports events) engages youth creativity and help-seeking behaviors (De Vecchi et al., 2017; Thorn et al., 2020; Rose-Clark et al., 2019; Ospina-Pinillos et al., 2019; Woolderink et al., 2015). Sharing lived experiences and personal narratives is an opportunity to expand youth designed mental health interventions (De Vecchi et al., 2017). Limitations may include monitoring youth's responses and potential triggers associated with codesigning/cofacilitation of mental health interventions (De Vecchi et al., 2017; Thorn et al., 2020). The extent and promise of

peer-facilitated groups on youth mental health should be further explored (Rose-Clark et al., 2019; Thorn et al., 2020).

RECOMMENDATIONS

- Use evidence-based strategies for organizational alignment (e.g., ARC intervention) and community coalition building (e.g., Communities That Care) to plan and implement evidence-based mental health prevention and intervention at the community level.
- Build on research demonstrating that communities can support mental health service delivery via peer-engaged mental health promotion, specialized and targeted clinician-staff training, and individual-level therapeutic services.
- Prioritize community-led initiatives, with a particular focus on youth-led initiatives and youth codesign of interventions and improvements to community infrastructure for mental health.

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CHAPTER 9

Measuring Progress

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BOTTOM LINE

- To assess population mental health, psychologists should look beyond the individual-level tools we have traditionally used to assess mental health.
- Psychologists should assess both *aggregated individual-level outcomes* (e.g., nationwide rates of mental illness) and *macrolevel factors* that bear on mental health (e.g., community safety; structural stigma) using large-scale, nationally representative data from multiple sources (e.g., self-report surveys, administrative datasets). Data should be made available, with geographic indicators tied to mental health-relevant outcomes, to facilitate research on population mental health.
- Because the factors that influence mental health also influence physical health, such data may help scientists and policymakers improve a wide range of health outcomes.
- When individual-level evidence-based interventions for mental health are scaled-up, psychologists should collect data on implementation and dissemination strategies, successes, and failures to determine whether scale-up efforts are successful and equitable (and, if they are not, to guide targeted shifts in scale-up processes).
- When policies are enacted that may promote or undermine mental health at a macrolevel (e.g., state or community), psychologists should evaluate their impacts on population-level mental health using established public health policy research methods (e.g., difference in difference designs), already used to study physical health outcomes. This goal will require *proactive efforts* from our field to ensure that the necessary data (on aggregated individual-level outcomes, macrolevel factors, and policies) are collected, and made accessible, for policy-relevant analyses to be conducted.

Mental health interventions, such as psychotherapy, are traditionally targeted towards individuals. In order to measure the effectiveness of these individual-level interventions, researchers have relied on self-report methods such as symptom inventories and diagnostic interviews. However, the *population mental health care approach* requires psychologists to think beyond the impacts of our individual-level interventions on individual patients’ mental health outcomes. Rigorous measurement of mental health outcomes “at scale” (i.e., at a population-level) brings a unique set of challenges and opportunities; it is also essential to assessing and improving efforts to promote mental health at scale. This memo describes current best practices for measuring population mental health, many of which are drawn from existing methods for measuring population physical health, as well as challenges and recommendations for how to better facilitate its measurement going forward.

Measuring Individual-Level Outcomes in Aggregate

One conceptually straightforward way to assess the mental (or physical) health levels of a population is to administer self-report measures of health to a sample of individuals in

that population. For this approach to be practical, self-report measures must be valid as well as brief, in order to minimize the burden of data collection at a large scale. A recent review (Becker-Haimes et al., 2020) provides suggestions for brief, freely available, evidence-based measures of youth mental health in the domains of overall mental health, anxiety, depression, disruptive behavior, traumatic stress, suicidality, psychosis, disordered eating, bipolar/mania, and substance use. Brief measures can also be used to assess physical health outcomes. Beyond symptom measures, data should be collected on other factors that bear on individuals’ mental health, such as help-seeking, coping behaviors, and beliefs and attitudes about mental health.

While there is no shortage of instruments that can be used to measure population mental health, little data is systematically collected at a population level. Current exceptions to this include the National Survey on Drug Use and Health (which only collects data on depression and drug use), the State of Mental Health in America survey (Reinert et al., 2021), and the National Survey on LGBTQ Youth Mental Health (The Trevor Project, 2022). Whether by providing further support to these initiatives or by creating new surveys, psychologists must make an effort to collect—and make

publicly available—individual-level mental health outcomes at a large scale. Such efforts may dovetail with existing efforts to measure population physical health outcomes.

In order to facilitate study of mental health at the community level, it is necessary for data to be linked to geographic indicators of a reasonably small size. When geographic indicators are too broad, this limits research. For example, if

population mental health data are only available by state, researchers cannot study the relationship between neighborhood-level factors and mental health outcomes. In order to measure population mental health in specific communities, data should be available at the census tract level or equivalent. However, research priorities must be balanced against other considerations, e.g., respondent anonymity.

RECOMMENDATIONS
<ul style="list-style-type: none">▪ Nationwide surveys should regularly collect data on a broad set of mental health outcomes. At present, only a few surveys (e.g., NSDUH) collect mental health data at all, and those data are limited.▪ These data should be made available at small geographic levels so that researchers can assess the mental health of individual communities. Ideally, the microdata—not only the summary data—should be available within reasonably small geographies.

COMMUNITY-LEVEL MENTAL HEALTH OUTCOMES

“Community-level mental health outcomes” can refer to both the aggregated symptom levels or diagnosis rates of individuals within a community (as in the nationally administered surveys described above) and the community-wide conditions that facilitate the mental health of the individuals within them (Remington & Booske, 2011). One well-known approach for measuring the latter—the social determinants of health—is the County Health Rankings framework (Hood et al., 2016). This physical health framework assesses variables such as characteristics of the physical environment

(e.g., environmental quality), social factors (e.g., community safety), economic factors (e.g., employment), access to care (and local quality of care), and health behaviors (e.g., alcohol use, diet and exercise). A similar framework—the American Health Rankings—documents physical health outcomes by state; public health stakeholders (e.g., policy-makers, public health agencies) rate these data as highly useful (Erwin et al., 2011). Measuring the mental health of communities requires a similar approach: one that collects and makes available community-level information on the social and structural factors that bear on mental health.

RECOMMENDATIONS
<ul style="list-style-type: none">▪ Facilitate the collection of data on a variety of factors associated with mental health (e.g., mental health treatment access, poverty, community violence) and make this data available in a central database.▪ The determination of which variables to measure should be guided by existing research on the community-level and structural determinants of mental health.

Evaluating the Impacts of Population Mental Health Policies

Public policies of all kinds can have positive and negative impacts on population mental—as well as physical—health outcomes. This includes policies not directly aimed at impacting mental health (e.g., public assistance for families, antitrans legislation). There are different best practices for evaluating individual-level interventions (e.g., provider-de-

livered therapy) and macro-level interventions (e.g., county-wide initiatives to promote healthy behaviors).

INDIVIDUAL-LEVEL INTERVENTIONS

When individual-level interventions are deemed effective (e.g., in an RCT design), a natural next step for population mental health may be to scale these interventions up. Scale-up is not straightforward, and we should not expect

interventions that work in a controlled RCT setting to work just as well at scale. Instead, it is important to evaluate the effectiveness of intervention scale-up (Fagan et al., 2019; Koorts et al., 2021; Zomahoun et al., 2019). Data should be collected on factors such as stakeholder engagement, buy-in, and communities’ capacity to support a scaled-up intervention, using a “systems approach” (McGill et al., 2021; Rutter et al., 2017). However, current reporting practices on implementation strategies are insufficient (Hooley et al., 2020).

Macrolevel Interventions

When we aim to evaluate macrolevel interventions (e.g., a county-wide initiative to promote healthy behavior), we need to use methods that allow for comparison across localities. These include the difference-in-difference framework commonly used in public health policy evaluation (Wing et al., 2018). These methods require access to large-scale (e.g., nation-wide) datasets with geographic indicators—so long as the geographic indicator is small enough to facilitate specific measurement. For example, when data is only available at a state level, it is not possible to evaluate county-level interventions within a state.

RECOMMENDATIONS

- Any time a population mental health intervention is delivered, efforts should be made to collect the data required for its evaluation on a variety of dimensions (effectiveness, equity, etc.).
- When resources are spent scaling up effective interventions, some resources should be earmarked for the evaluation of program scale-up.
- In order for researchers to assess the effectiveness of macro-level interventions, they will need access to large-scale geographic data (e.g., nationwide survey data with geographic information).

EVALUATING EQUITY AND DISPARITIES IN OUTCOMES

Population mental health research cannot only be concerned with overall levels of mental health. Instead, psychologists must attend to equity and disparities in outcomes across groups. This has implications for each point discussed above: (1) When individual-level outcomes are reported in aggregate, data should be made available either as microdata (where each response is tagged with the respondent’s demographic information) or as summary

data broken down by race, SES, etc. (2) When macrolevel outcomes are reported, data should be made available at the community level (e.g., census tract or neighborhood). Data on states and cities are useful, but do not allow researchers to examine the many factors that vary within each state and city. (3) When policies are evaluated, psychologists should attend to differences in effects across different groups, not only on populations as a whole (Dodge et al., 2022).

RECOMMENDATIONS

- Whether using individual-level outcomes assessed in aggregate or macrolevel data, researchers should attend to *disparities* in outcomes and intervention effects across groups, not just overall population means.

THOUGHT & ACTION QUESTIONS

- What are the most important macrolevel factors bearing on population mental health? How can these be measured?
- Are there existing data collection initiatives (e.g., nationwide surveys) that are up to the task of measuring population mental health? What new initiative(s) are needed?
- What areas of research need more attention (or investment) in order to provide the knowledge we need to measure changes, and intervention effects, at the population mental health level?

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