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From Research to Practice: Lessons Learned

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Abstract

Research has informed practice since the origins of developmental psychology, but only recently has basic science and practice begun to be consistently integrated with one another. In addition, considerable research documents the utility of empirically-supported interventions, yet it has been difficult to implement such interventions outside of the research context. This paper describes two Randomized Clinical Trials (RCTs) for maltreated infants and preschoolers as an example of successful community, funder, and researcher partnerships. Key strengths and challenges involved in designing and conducting the studies are discussed, and the necessity of considering the developmental and cultural appropriateness of empirically-supported interventions is highlighted. Programs designed to provide data on the effectiveness of interventions initially evaluated in RCTs are presented. These initiatives indicate that it is possible to create successful evidence-based interventions, even within the complex world of the child welfare system. These studies provide information on developmental and outcome intervention differences that contribute to the scientific literature and have real-world implications for policy makers, funders, and ultimately, for children.

Keywords

Developmental psychopathology; Science and practice; Evidence-based; Interventions; Randomized clinical trials (RCT); Child maltreatment; Dissemination

1. Introduction

It is only recently that basic science and practice have begun to be more consistently integrated (Renninger & Sigel, 2006). In fact, the availability of interventions that have been rigorously evaluated and that are supported by empirical evidence has burgeoned (e.g., Fonagy, Target, Cottrell, Phillips & Kurtz, 2002). Despite the increased availability of empirically supported treatments, these interventions continue to be underutilized in real world settings such as schools and community mental health clinics. Perhaps of even greater concern is the continued utilization of interventions that may not only be ineffective but that may eventuate in harm (Lilienfeld, 2007). For example, holding therapies have resulted in child death and randomized control trials have not been conducted to determine whether this or related interventions yield any positive outcomes (Mercer, 2002). Controlled studies of

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substance-abuse-prevention programs also have shown iatrogenic effects (Werch & Owen, 2002).

A myriad of reasons underlie the ongoing schism that separates research and practice. Sigel (2006) highlights one contributor to this unfortunate gap as residing in the view that research studies are not “user friendly” for most practitioners. In commenting on the formidable challenges involved in the translation of research into the practice and social policy arenas, Shonkoff (2000) describes the “cultural” differences associated with each of these domains. He argues that scientists are trained to pose questions and to be guided by facts, whereas policymakers are driven by political and economic forces emanating from society. He views service providers as similar to policymakers with respect to the need to act before all data are available. In reflecting on the tension among research, practice, and policy, Shonkoff (2000) states, “Science is focused on *what we do not know*. Social policy and the delivery of health and human services are focused on *what we should do*” (p. 182, italics his). Thus, although progress has occurred with respect to an increased acknowledgement among funding bodies and policy makers regarding the importance of utilizing interventions that have been empirically-evaluated, obstacles remain that preclude front-line professionals from fully embracing proven treatments.

This article draws upon decades of work focused on providing and evaluating developmentally informed interventions to at-risk children and families. The theoretical foundation for our work emanates from the field of developmental psychopathology (Cicchetti, 1984; Cicchetti & Cohen, 2006), a science that not only bridges diverse fields, but also strives to reduce the dualisms that exist between behavioral and biological sciences, between basic and applied research, and between empirical research and its dissemination into clinical contexts (Cicchetti & Toth, 2006). A decade ago, Zigler (1998) exhorted researchers to recognize their obligations to the populations that they study in order that the best available information be utilized to inform practice and social policy. Developmental psychopathology advances this ideal by integrating knowledge of normative developmental processes with information on atypical pathways of development acquired through research on diverse populations. Intervention studies also can inform developmental understanding by investigating the malleability of developmental processes. Basic as well as applied research ultimately can enhance knowledge that may eventually result in improved societal outcomes. Currently, we possess considerable knowledge and tools to translate research that has been conducted on risk, psychopathology, and intervention efficacy to the broader clinical community in order to achieve a research-informed policy agenda that will contribute to the welfare of societies.

Our experiences in conducting research and providing empirically-supported interventions for maltreated children provide a perspective that is uniquely poised to foster productive exchanges between researchers and practitioners. We first define terms that are relevant to the explication of our discussion to facilitate shared understanding. Next, we provide examples of two treatment efficacy evaluations, stressing design considerations that enhanced the dissemination of these treatments into the broader community. We then discuss challenges involved with exporting efficacious intervention strategies into the practice arena, and conclude by describing a community/university partnership and proffering suggestions for increasing the dissemination and sustainability of empirically supported interventions into real world clinical contexts.

2. Experiences conducting research and providing interventions for maltreated children

2.1. Shared language and concepts across research and practice: Evidence-based practice and empirically supported treatments

Evidence-based practice refers to the integration of clinical expertise and patient values with the best available empirical research (Institute of Medicine, 2001). Although empirically supported treatments are one component of evidence-based practice, it is important to underscore that evidence-based practice also requires the utilization of clinical skills and expertise in order to apply efficacious treatments appropriately (Huppert, Fabbro, & Barlow, 2006). In the clinical world, empirically-supported treatments are often misunderstood. For example, many practitioners believe that "manualized treatments" are delivered mechanically and without considering the unique needs of individual patients. As eloquently captured by Kendall's (1998) article on breathing life into treatment manuals, proponents of empirically-supported treatments underscore the need for supervision in combination with the manual and recognize that a "one size fits all" approach to treatment is doomed to failure.

2.1.1. Distinctions between efficacy and effectiveness—When determining the support for various treatment approaches, discussions frequently turn to queries regarding what extent of "evidence" qualifies a treatment as empirically-supported. In this regard, distinctions between efficacy and effectiveness investigations are important. Clinical *efficacy* investigations typically involve randomized control trials (RCTs) and utilization of manuals, clear criteria for sample inclusion and exclusion, reliance on staff who have been provided with considerable training in the intervention modality, ongoing supervision of therapists, and monitoring of the delivery and fidelity of the intervention by the program developers or those trained directly by the initial program implementers (Henggeler, 2004). Given these well-controlled parameters, it is not surprising that efficacious treatments may not be as *effective* in less controlled clinical settings. In clinic populations, complex contextual situations, such as foster care placement, occurrences of domestic violence, and potentially less than optimal organizational climate and site characteristics are common (Henggeler, 2004). It has been argued that the most complex cases (e.g., youth with significant comorbidity or those mandated to participate) are not included in general efficacy trials (Addis & Waltz, 2002). Although exclusion criteria are important considerations in RCTs, recent research (e.g., juvenile delinquency) suggests that efficacy trials often do contain symptom severity and environmental challenges commonly seen in clinic settings (Weisz, Jensen-Doss, & Hawley, 2006).

Unlike efficacy studies, *effectiveness* research involves the conduct of treatment evaluations in naturalistic settings that do not exert as high a level of control as that associated with efficacy trials. Although effectiveness designs are more generalizable to the broader population than are efficacy investigations, this advantage may be countered by threats to internal validity (Fonagy et al., 2002). Thus, a commitment to establishing effectiveness in less controlled settings is essential. It is also critical that criteria for what constitutes *evidence* be standardized. For example, self-report satisfaction questionnaires do not provide information that establishes the effectiveness of a given intervention approach.

Increasingly, a consensus exists that in order to be considered evidence-based, treatments must be manualized, investigated via well-controlled experiments, (the gold standard being RCTs), and be evaluated at a site other than where the treatment was developed (Kazdin & Weisz, 2003). Independent replication is essential in order to ascertain whether the "active ingredient" in the treatment is specific to the developer of the intervention or whether the

model can be effectively utilized by others. Although the value of efficacy studies in contributing to the evidence-base of psychological treatments is apparent, it cannot be the final step if the goal is to improve the availability and utilization of empirically-supported treatments. Rather, when efficacy studies are designed, the ultimate population that might benefit needs to be considered. In some instances, minimizing exclusion criteria might ultimately result in a greater likelihood of an efficacious treatment being effective in real world clinical contexts. These considerations, when included in the preliminary stages leading up to the actual study design, should allow for a less daunting transition from efficacy to effectiveness in real-world contexts.

2.1.2. Developmental considerations—Even when treatments have been supported by empirical evidence and disseminated to broader clinical contexts, the developmental appropriateness of the modality must be considered if the intervention is to be optimally effective. Although an apparent paradox, most treatments for children and adolescents are not developmentally informed (Holmbeck, Greenley, & Franks, 2003). Knowledge of developmental norms, an understanding of how developmental level may vary within the same age group, sensitivity to the changing meaning that problems have at different developmental levels, and attention to the effects of developmental transitions and reorganizations all may enhance the likelihood that an intervention will be effective (e.g., Cicchetti & Toth, 1992, 1999; Noam, 1992; Shirk et al., 2000; Toth & Cicchetti, 1999). Moreover, although families may be comprised of children of different ages, utilization of general intervention approaches are not likely to address the needs of children that are associated with discrete developmental periods.

In addition to ensuring that developmental elements are present in empirically supported treatments, it also is important to recognize that research on basic developmental processes can and should inform prevention and intervention efforts. Clinical research on interventions can provide information that translates into further theoretical and empirical advances (Cicchetti & Toth, 2006). For example, if the developmental course is modified as a function of the provision of a randomized preventive trial, then prevention research has contributed to identifying the likely processes that are involved in the emergence of maladaptive developmental outcomes and psychopathology. In essence, prevention and intervention research elucidates the important bidirectionality that can occur between research scientists and interventionists.

2.1.3. Cultural relevance—A particularly challenging issue in the provision of evidence-based interventions in community contexts pertains to the dearth of empirical support with respect to clients from diverse cultures. Unfortunately, far too few intervention efficacy studies have addressed issues of cultural relevance (Rosello & Bernal, 1999). In general, mainstream psychotherapy in the United States has been viewed as primarily Eurocentric and, as such, insensitive to the values of people of color (Comas-Forgas, 2006; Hall, 2001). This lack of attention to culture is not surprising, given the lags in addressing cultural issues that have been present in developmental psychology more broadly (Garcia-Coll, Akerman, & Cicchetti, 2000). In the absence of a base of normative data in developmental psychology, it is particularly challenging to develop culturally informed interventions. Thus, psychotherapeutic approaches in the U. S. are typically guided by western, middle-class cultural values, including individualism, autonomy, and personal achievement as opposed to sociocentric values such as family, interdependence, and connectedness (Garcia-Coll et al., 2000; Hoagwood & Jensen, 1997). In addition to general mistrust regarding the appropriateness of integrating evidence-based interventions into community settings, the paucity of empirical evaluations on cultural appropriateness increases the wariness that clinicians providing services to impoverished and culturally diverse populations experience when being urged to expand their techniques to include empirically-supported treatments.

Clients and community groups also may be reluctant to accept evidence-based programs and services that they believe to be insensitive to their cultural backgrounds.

Despite this grim situation, some studies have addressed the effectiveness of empirically-supported treatments with diverse ethnic and cultural groups. In particular, cognitive-behavioral therapies and interpersonal psychotherapy have been shown to be effective in treating depression among Latino and African American populations (Comas-Forgas, 2006) and Child-Parent Psychotherapy has been shown to be effective with Latina, Anglo American and African American mothers and their children (cf., Cicchetti, Rogosch, & Toth, 2006; Lieberman, Weston, & Pawl, 1991). Finally, Multisystemic Therapy has been successfully tested, in both efficacy and effectiveness trials, with samples of ethnoculturally diverse adolescents involved in the juvenile justice system (Schoenwald & Henggeler, 2005).

2.2. Preventive interventions for high risk populations

Over the last two decades, the Mt. Hope Family Center (MHFC) has provided and evaluated a number of developmentally-informed and culturally-sensitive interventions to populations including maltreated children and offspring of depressed mothers. Our experiences in designing and implementing these interventions highlight avenues of success, as well as challenges, associated with exporting efficacious treatments into the broader clinical community. Therefore, we summarize two randomized clinical trials (RCTs), focusing on design considerations that increase the likelihood of the intervention being effective in less controlled settings.

First, a brief overview of MHFC as the setting in which the randomized trials were conducted is necessary. Although MHFC is located within the Department of Clinical and Social Sciences in Psychology at a private research university, from its inception MHFC forged a strong partnership with the community. In its early years, MHFC staff psychologists were expected to devote equal energies to conducting research and to providing clinical services to children who were referred from the County's Department of Human Services (DHS) for concerns related to child maltreatment. Such close involvement in clinical endeavors not only informed future research questions, but also communicated a strong patient care commitment to front-line practitioners and funding bodies. Rather than being viewed as staffed by ivory tower researchers, MHFC was recognized as an educational resource for the community. Trainings were offered annually to new caseworkers in the DHS and long before evidence-based treatments became popularized, basic research was viewed as necessary in order to inform the delivery of effective treatments. All clinical MHFC staff members were selected based on an interest in and openness to both basic and evaluation research. Thus, a culture in which research and practice were afforded equal respect was fostered. This perspective contributed to receptivity within the child welfare and clinical communities regarding the importance of theoretically-informed and empirically-supported treatments. Because the community recognized the need for treatment evaluations, barriers to participant recruitment were minimized when federal funding for RCTs was obtained. For example, the administration of the local DHS worked with MHFC research staff to develop a system of identifying eligible participants. Moreover, when data on efficacious interventions were obtained, DHS administrators were committed to providing funding to sustain the provision of services independent of the research evaluation. To highlight the MHFC journey from research to practice, we next discuss our RCTs for maltreated infants and preschoolers.

2.2.1. Project HOPE (Home-based Opportunities for Providing Enrichment)—

Project HOPE was designed to provide a preventive intervention to infants who were residing in families with histories of child maltreatment. With the common goals of

fostering infant attachment security in order to avert maladaptive development, we implemented two theoretically distinct intervention modalities. One model, Psychoeducational Parenting Intervention (PPI), utilized an ecological perspective and was based on models of maltreatment that highlight parental stress and parenting skills deficits as contributors to maltreatment. Therefore PPI therapists strived to provide social support and developmentally appropriate parent training in order to reduce stress and social isolation, promote more positive parenting, and decrease child maltreatment. The other model, Child-Parent Psychotherapy (CPP), was based on research that underscores the importance of parent-child attachment in fostering positive child development, improving parent-child interaction, and decreasing child maltreatment. CPP involved dyadic mother-infant therapy sessions designed to improve the parent-child attachment relationships by modifying the influences of negative maternal representational models on parent-child interaction. A component of improving mothers' perceptions of their infants involved the provision of developmental guidance related to appropriate expectations of the behavior of infants. Therapists were trained in stage-salient issues for infants and toddlers, and they gently introduced discussions of normative development into the dyadic sessions, while encouraging mothers to support the developmental gains that their children made over time. Both models of treatment are discussed more fully elsewhere (see Cicchetti & Toth, 2006; Lieberman & VanHorn, 2004).

We compared the pre- and post-intervention functioning of mothers and maltreated infants in each of these models of intervention with the functioning of mothers and maltreated infants who were receiving services typically available in the community, that is a Community Standard (CS) group and with a demographically comparable Nonmaltreated Comparison (NC) group. This final group was included to compare normative developmental changes over time in a group of infants who had not experienced maltreatment, but who had similar environmental stressors with those who had been identified by DHS for abuse/neglect. All maltreated infants and their mothers were randomly assigned to PPI, CPP, or the CS groups.

To facilitate enrollment of maltreated infants and their mothers into our program, DHS allowed us to retain a staff member who worked for us, but who, based on responsibilities not related to our project needs, also was as an employee of DHS. This individual served as the liaison person who recruited families to participate in our RCT. Because of constraints imposed by confidentiality, only a DHS staff member had knowledge of families with legally sanctioned reports of child maltreatment. Thus, the initial gatekeeper for approaching families had to be a staff member employed by DHS. The DHS liaison was instructed to approach all families who met study inclusion criteria and ask if they were willing to be contacted by our project staff. Thus, the DHS liaison did not use any selection biases to determine whom to approach. By working closely with a DHS liaison, timely recruitment and maintenance of family confidentiality were assured. A family's name was released to our project staff only after consent was obtained by the caregiver. Finally, our project staff, not DHS, was solely responsible for randomization of families to the active treatment conditions or to the treatment as usual (CS). In order to avoid any possible perceptions of coercion, the voluntary nature of the program was stressed and mothers were assured that their refusal to participate would have no adverse effects on their status with DHS. Rather, the benefits of participation through the potential provision of supplemental interventions for the mother and her infant were emphasized.

It is important to clarify that because we also evaluated the CS group, referral to our project did not necessarily result in assignment to one of our intervention models. Rather, referral indicated a willingness to participate in our research project and the possibility of receiving enhanced services. Even though a family was assigned to the CS condition and not to a

treatment group, they received referrals to resources that would have been more difficult for families to access outside of the research trial. For example, mothers who requested services for mental health needs were assisted in securing referrals for treatment. Thus, to potential families and DHS staff, even those who were in the CS condition could receive additional support and benefit from participation in the research.

Nonmaltreating (NC) families were chosen randomly by the liaison from the County list of recipients of Temporary Assistance to Needy Families (TANF). Because prior experience had revealed that the majority of maltreating families referred to DHS are socioeconomically disadvantaged, utilization of TANF lists provided us with access to a demographically similar population. Although all families were asked whether they had ever received child protective services, we had learned that families are not always forthcoming with this information. Therefore, during our initial contact, consent was obtained to verify nonmaltreatment status by accessing DHS central registry data. Maltreatment status was further verified via the conduct of interviews with the mothers of infants.

Interventions were initiated when infants were approximately 12 months old and continued for a period of one year. Our approach to outcome evaluation was conceived within a developmental psychopathology model that emphasizes the importance of multi-contextual and multi-domain assessments that target multiple levels of analysis. Assessments were conducted to examine a number of developmental domains of relevance to infancy, including affect regulation, attachment relationships, and the emergence of an autonomous self system. Measures of maternal functioning and contextual stressors also were included. Of particular relevance for the outcome evaluation, assessments of the quality of attachment (Strange Situation), were conducted at baseline (12 months), at the conclusion of the intervention (24 months), and one-year post-intervention given the importance of determining the enduring effects of preventive interventions. Both the PPI and CPP treatment conditions were found to be efficacious in fostering increased security of attachment (Cicchetti, Rogosch, & Toth, 2006).

The goal of exporting efficacious treatments into the broader community requires researchers to consider how the study design might impact future treatment dissemination. Because the evaluation of these interventions involved a randomized controlled clinical efficacy trial, inclusion and exclusion criteria were necessary to ensure sufficient homogeneity among participants. However, we limited our exclusion criteria to factors that we felt would undermine the integrity of the intervention because our intent was to evaluate interventions that would have utility for the broader population of maltreating families. Therefore, mothers who had thought disorders and mothers and infants with severe cognitive limitations or physical challenges that compromised their ability to utilize therapies or complete evaluation visits were not enrolled. Infants not living with their biological mothers also were excluded from participation, given the focus on fostering a secure attachment relationship. The sample consisted of families who were grappling with multiple stressors, such as poverty, domestic violence, depression, residence in high crime neighborhoods, and substance use and abuse.

Treatments were manualized and therapists received extensive training and ongoing supervision. All intervention evaluations included weekly individual supervision, weekly group presentations, and discussions of videotaped cases. Checklists were utilized to assess adherence to the parameters of the intervention. It is important to note that therapists were committed to conducting the manualized treatments in accord with the study protocol, while the necessity of exercising clinical judgment in the implementation of the intervention was supported and emphasized. For example, if a therapist arrived at a home where a crisis had

occurred, then they were advised to address the crisis, keeping the goals of the intervention in mind and trying to use the crisis to continue to address the treatment goals.

In conducting efficacy trials such as Project HOPE, participant recruitment can be challenging. It often is difficult for community partners to understand why someone may not be eligible for the intervention. Efforts to adhere to inclusion/exclusion criteria can appear insensitive to community service providers who are invested in ensuring service accessibility for all who could potentially benefit. Moreover, explaining randomization procedures to individuals not accustomed to conducting research can be difficult. It is important to communicate that the intervention is conceived in the best possible way to optimize the likelihood of establishing its efficacy. Once this occurs, the intervention then can be utilized with more heterogeneous groups of multi-problem clients. Establishing efficacy is framed as a common goal for the agency and the researcher because it is only by stringently testing interventions that we can create effective interventions that do not waste precious community resources. Further, unless the intervention evaluation adheres to scientific standards, efforts to demonstrate its efficacy will not be credible and its ultimate translation into clinic settings will be compromised.

Potential clients may have difficulty understanding why they cannot receive their treatment of choice. Families were told that the treatment that they might be eligible for would “be determined by the flip of a coin” and we sought their agreement to accept this chance outcome. If a potential participant was not willing to accept randomization to treatment conditions, then they were ineligible to continue in the research program and were referred to other community providers. Although this approach may appear harsh to those not accustomed to conducting research, it reflects the dual focus on service provision and evaluation. Moreover, ineligible families were always supported in accessing other services, such as through the provision of transportation to an initial intake visit (Cicchetti & Toth, 2006). Thus, even when direct service was not provided, families received additional support, thereby demonstrating to families and service providers that families’ participation in the study served more than the attainment of scientific goals.

The process of evaluation itself also needs to be considered when conducting efficacy studies with stressed families. The need for a comprehensive, scientifically-valid assessment must be balanced with respect for potential discomfort and excessive time demands on struggling families. All assessments were piloted prior to program inception and honed to maximize information in the shortest amount of time. We are often asked if it is burdensome for already overwhelmed families to be asked to participate in evaluation visits. In fact, we have found that families are most often positive about these experiences. Feedback from participants is solicited routinely via anonymous questionnaires in which they rate their research experience and suggest changes. Mothers consistently report positive experiences, describe staff members as warm and respectful and state that they learned about themselves and their child through their participation. This input is important when considering possible future effectiveness evaluations in community settings, as clinical staff may be reluctant to support their families’ involvement in research. In all of our work, clinicians encourage mothers to complete the evaluation component of the program, even though the evaluation is conducted by a separate research staff. If researchers are concerned about a family’s well-being after completing a center or home research visit, they contact the project coordinator to determine if the family is in an active treatment condition and, if so, the coordinator alerts the therapist as to the family’s needs. If the family is not in a treatment group, then efforts are made to link them with other services in the community.

2.2.2. Project EIDP (Early Intervention Development Project)—The design strategy of the EIDP program was similar to that of Project HOPE (the two intervention

models of CPP and PPI were compared with Community Standard and nonmaltreating comparison groups). However, the target population was preschool children rather than infants and EIDP blended federal research funding (National Center for Child Abuse and Neglect -- now the Office of Child Abuse and Neglect through the Children's Bureau -- for evaluation services) with local funding (DHS and United Way support for family and child services). This combined funding enhanced the implementation of the evidence-based approach by providing support for the intervention after the federal grant ended.

A number of modifications to the CPP program were made to ensure that the intervention was developmentally appropriate for older children. Therapists were trained in child development transitions from toddlerhood into the preschool period and through early school age. While the attachment relationship remained the focus of CPP, there was a shift to developmental concerns such as negotiating goal-corrected partnerships that are characteristic of attachment relationships during the preschool developmental period.

Clinical trials conducted at MHFC added to the evidence base supporting the efficacy of the intervention for maltreated infants and preschoolers. In contrast to the benefits of CPP and PPI both fostering increased attachment security between infants and their mothers (Cicchetti, Rogosch, & Toth, 2006), only CPP improved preschool children's representations of self and of caregiver (Toth, Cicchetti, Macfie, Maughan, & VanMeenen, 2000). These findings suggest that early in development attachment security may be improved even if an intervention does not target the mother-child relationship directly. However, as development proceeds and as representational and self-system processes become more consolidated, an intervention designed specifically to address the attachment relational system may be necessary.

Local funders have been particularly interested in the "real world" data that emerged from these studies. For example, in the EIDP study the percentage of children in the CPP group who were placed outside of the home in kinship or foster care placements occurred at one tenth of the rate of the Community Standard group (2% vs. 21%) and at half the rate when PPI and the Community Standard were compared (10% vs. 21%). The potential for cost savings in reduction of foster care is extremely valuable to the County, which struggles with budgetary issues related to provision of mandated services. Additionally, comparisons of results between studies at MHFC suggest that whereas multiple intervention approaches lead to significant improvements for families with infants, the developmental needs of older children may require different types of interventions to impact specific areas of need. Taken together, these studies provide information on developmental and outcome intervention differences that contribute to the scientific literature and that also have real-world implications for policy makers and funders.

In summary, these RCTs typically involve a balance between the design considerations and the conduct of empirically sophisticated and developmentally informed scientific evaluations with the needs of families. In addition, it is essential to develop an understanding of the challenges involved in implementing interventions in non-University settings that are likely to have fewer resources to both provide and to monitor the effectiveness of the intervention once it is exported into the community.

3. Exporting intervention into practice

The summary of the approaches of MHFC RCTs provides the background for exploring the next step in the translation of research to practice. It is important to address the process wherein an evidence-based intervention is successfully incorporated into the broader community.

3.1. Building Healthy Children (BHC)

Most recently, our partnership with the Monroe County DHS and United Way led to the development of a new program designed to prevent maladaptive parenting and maltreatment in impoverished mothers who had their first child prior to the age of 21. In 2006, DHS and United Way issued a Request for Proposals (RFP) for the development and evaluation of an evidence-based preventive service. The RFP requested a menu of developmental and culturally-sensitive programs that included (1) a home-based visitation program, (2) *Incredible Years* parent skills groups, (3) Child Parent Psychotherapy (CPP), and (4) Interpersonal Psychotherapy (IPT) when maternal depression is present. This RFP recognized that community child welfare services had become focused on treatment rather than prevention and that primary and secondary prevention hold great promise for decreasing child maltreatment in potentially vulnerable populations.

Although MHFC was prepared to provide all of these services, the development of a collaborative partnership with other community service providers could best capitalize on community expertise and foster the ultimate exportation of evidence based treatments into the broader community. Therefore MHFC partnered with the Society for the Protection and Care of Children (SPCC) and the Social Work Division at the University of Rochester Medical Center (URMC). SPCC strengths included an extensive history of providing services to teen parents and the URMC Social Work Division had provided culturally-sensitive preventive outreach services to impoverished mothers for over 28 years. Because the RFP requested that referrals be obtained from a pediatric practice, Strong Health Social Work's close ties with URMC's pediatric department also would facilitate the referral process. Importantly, DHS and the United Way recognized the need to critically evaluate the program and dedicated dollars to the evaluation process. Thus, although the per child cost of the program was initially startling to the funding bodies, they were able to recognize that a quality evaluation could not be conducted without dedicated financial support. The 4-year grant, with an annual budget of nearly 1 million dollars, was awarded to this partnership and funding began in April of 2007. MHFC's role was to provide CPP and IPT and to design and oversee the process of program evaluation.

The vision demonstrated by the funding bodies and community partners around the launching of the BHC initiative is noteworthy. First, the call for evidence-based services is significant. Second, an understanding of the necessity of providing adequate training for therapists allowed for a 3-month start-up period. Recognition of the importance of clinical supervision and monitoring of the fidelity of service implementation also enabled us to establish relatively low caseloads for therapists. Finally, the willingness of funders and community partners to support random assignment of mothers and children to BHC or to a treatment as usual group reflected an appreciation of the importance of scientifically evaluating the program.

The BHC initiative reflects a culmination of over two decades of discussions and the development of trust among MHFC, a university-based organization, and government and private funding sources. It is clear that such effective partnerships are possible, but that commitment across systems and the ability to recognize and build on the strengths of diverse organizations are integral to success.

3.2. Challenges to implementation

Although the examples provided in this article demonstrate that it is possible to export evidence-based treatments into community settings, the challenges involved in this process cannot be minimized. Thus, a number of salient considerations must be grappled with if empirically-supported treatments are to be more widely disseminated.

First, issues related to funding of services must be addressed. Each intervention described was supported by contracts for clinical services through the county DHS or via support from private donors and the United Way. As such, we were not constrained by parameters typically present when dealing with third-party reimbursements for mental health services through private insurers or Medicaid reimbursement. The demands associated with fee for service billing have resulted in greatly increased clinical case loads. It is not unusual for therapists in community settings to have caseloads of 40 - 100 individuals, all with complex, multistressed histories (Hromco, Moore, & Nikkel, 2003). The onus of such workloads and the associated expectation for the generation of billable hours severely limit the ability of even the most motivated therapist to find time to learn new treatment approaches. Funders invested in ensuring that treatments are evidence-based must be willing to provide resources for educational initiatives. Such commitment requires a long-term versus short-term perspective on cost-effectiveness.

Even when organizations are interested in supporting staff members in developing such expertise, training opportunities may be difficult to obtain. In addition to obstacles associated with freeing time for clinicians to learn new approaches, training may not be readily available or affordable. Graduate programs often have limited coursework and supervision in evidence-based treatments. Practicing clinicians may attend single-day workshops, but short-term exposure for complex clinical treatments is not likely to yield competent service provision. Mechanisms for in-depth training and ongoing supervision to assist clinicians in mastering evidence-based treatment approaches may be inaccessible for practitioners.

As currently structured, insurance reimbursement also typically requires a psychiatric diagnosis. Although the revised Zero to Three Diagnostic Manual (Zero-to-Three, 2006) provides developmentally appropriate criteria for young children, in most states these diagnoses are not reimbursed by insurers. In addition, for many very young at-risk children, evidence-based approaches are more likely to focus on the prevention of future psychopathology in the absence of a current clinical diagnosis. Consequently, valuable interventions may not be delivered in community mental health settings. A vision of the future rather than a focus on income generation is necessary. Although prevention ultimately saves future and more costly financial investment (Reynolds, Temple, Ou, Roberston, Mersky, Topitzers et al., 2007), it can be difficult to convince policy-makers to commit to such an approach.

As interventions are exported to the broader clinical communities, it is critical that they be evaluated in these new contexts. This is an essential step in moving from efficacy to true effectiveness trials. It is likely that some evidence-based models will need to be modified in order to be delivered effectively in settings quite different from those in which their efficacy was first demonstrated. Financial investment is necessary. Typically community mental health clinic personnel are not capable of conducting treatment evaluation studies. Fortunately, researchers possess the skills needed to evaluate community programs and often can garner financial resources, such as grants, to conduct research and support the work of community providers. By creating university/community partnerships, researchers can access diverse populations and intervention and prevention programs can undergo effectiveness trials in the community. In the absence of supportive partnerships to assist community providers in evaluating newly incorporated evidence-based models, it will be impossible to ascertain continued effectiveness.

It is also important that community administrators trying to import evidence-based services recognize that efforts -- both in time and money -- must be expended to ensure that such treatments are maintaining fidelity to the original evidence-based models. Ongoing

supervision and continuing education, as well as utilization of fidelity assessments, are needed if drift from the empirically-supported treatments is to be prevented. Administrators and researchers alike should be aware that implementation may fail because of insufficient resources and that this will only hinder the adoption of future evidence-based programs.

Ultimately, the exportation of research-informed treatment methods into real world contexts requires solid partnerships among scientists, administrators, funding sources, and practicing therapists. The absence of a single link in this chain will doom the broader dissemination and maintenance of evidence-based practices to populations that sorely need them. Table 1 summarizes these issues and the solutions that we have utilized to overcome them.

5. Conclusions

This paper discussed challenges involved with moving from research to practice, but it also demonstrated that it is possible to facilitate developmentally appropriate community-based RCTs in partnership with service providers. This goal is an instantiation of Irv Sigel's commitment to ensuring that developmental theory informs prevention and intervention and that, ultimately, such empirically-supported treatments will be more easily accessible to practitioners and not relegated to the annals of scientific journals. To facilitate the move from research to practice, lessons that we and our colleagues have learned in over two decades of advocating for the importance of providing developmentally-informed and empirically-supported treatments to children and families in the child welfare system have been highlighted. Although we have drawn upon our experience with the child welfare system, we believe that similar challenges and effective strategies can be implemented in settings such as schools and community-based prevention settings. Our experiences demonstrate that quality science can take place within the community if the time and effort is directed toward developing mutually supportive partnerships between researchers, community agencies, and funders.

In closing, we reflect on Sigel's (2006, p. 1022) question in the final chapter of the "Child Psychology in Practice" volume of the *Handbook of Child Psychology*: "Should not developmental research offer useful and meaningful explanations for the course of development and where needed provide approaches for the prevention and amelioration of conditions that may hinder the optimization of the developmental trajectory?" We echo this question and heartily concur with Sigel's counsel that the application of research to practice "require[s] stretching and/or adapting the root metaphors in which we have been trained so that collaborations between researchers and practitioners are the basis of research and of any application of research to practice" (Sigel, 2006, p. 1022). Our goal as a field needs to ensure that research is part of practice and that practice is part of research. These mutually enriching transactions will yield benefits to both endeavors and ultimately will help to ensure that effective interventions are widely available and utilized.

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References

- Addis ME, Waltz J. Implicit and untested assumptions about the role of psychotherapy treatment manuals. *Journal of Consulting and Clinical Psychology*. 2002; 68:331–339. [PubMed: 10780134]
- Cicchetti D. The emergence of developmental psychopathology. *Child Development*. 1984; 55:1–7. [PubMed: 6705613]
- Cicchetti, D.; Cohen, D., editors. *Developmental psychopathology*. 2nd. Wiley; New York: 2006.
- Cicchetti D, Rogosch FA, Toth SL. Fostering secure attachment in infants in maltreating families through preventive interventions. *Development and Psychopathology*. 2006; 18:623–649. [PubMed: 17152394]
- Cicchetti D, Toth SL. Special issue: Developmental approaches to prevention and intervention. *Development and Psychopathology*. 1992; 4:489–728.
- Cicchetti, D.; Toth, SL. Developmental psychopathology and preventive intervention. In: Damon, W.; Lerner, R.; Renninger, KA.; Sigel, IE., editors. *Handbook of Child Psychology*. 6th. Wiley and Sons; New York: 2006. p. 497-547.
- Comas-Forgas, R. Cultural variation in the therapeutic relationship. In: Goodheart, CD.; Kazdin, AE.; Sternberg, RJ., editors. *Evidence-based psychotherapy: Where practice and research meet*. American Psychological Association; Washington, DC: 2006. p. 81-99.
- Confucius. *The Analects*.
- Fonagy, P.; Target, M.; Cottrell, D.; Phillips, J.; Kurtz, Z. *What works for whom. A critical review of treatments for children and adolescents*. Guilford; New York: 2002.
- Garcia-Coll C, Akerman A, Cicchetti D. Cultural influences on developmental processes and outcomes: Implications for the study of development and psychopathology. *Development and Psychopathology*. 2000; 12:333–356. [PubMed: 11014742]
- Hall NGC. Psychotherapy research with ethnic minorities: Empirical, ethical, and conceptual issues. *Journal of Consulting and Clinical Psychology*. 2001; 69:502–510. [PubMed: 11495179]
- Henggeler S. Decreasing effect sizes for effectiveness studies —implications for the transport of evidenced-based treatments: Comment on Curtis, Ronan, and Bourdain (2004). *Journal of Family Psychology*. 2004; 18:420–423. [PubMed: 15382966]
- Hoagwood K, Jensen PS. Developmental psychopathology and the notion of culture: Introduction to the special section on "The fusion of cultural horizons: Cultural influences on the assessment of psychopathology in children and adolescents.". *Applied Developmental Science*. 1997; 1:108–112.
- Holmbeck, GN.; Greenley, RN.; Franks, EA. Developmental issues and considerations in research and practice. In: Kazdin, AE.; Weisz, JR., editors. *Evidence-based psychotherapies for children and adolescents*. Guilford; New York: 2003. p. 21-41.
- Hromco JG, Moore MW, Nikkel RE. How Managed Care has affected mental health case management activities, caseloads, and tenure. *Community Mental Health Journal*. 2003; 36:501–509. [PubMed: 14713057]
- Huppert, JD.; Fabbro, A.; Barlow, DH. Evidence based practice and psychological treatments. In: Goodheart, C.; Kazdin, A.; Sternberg, RJ., editors. *The evidence for psychotherapy*. APA Press; Washington DC: 2006. p. 131-152.
- Institute of Medicine, Committee on Quality Health Care in America. *Crossing the quality chasm: A new health system for the 21st century*. National Academy Press; Washington, DC: 2001.
- Kazdin, AE.; Weisz, J. *Evidence-based psychotherapies for children and adolescents*. Guilford Press; New York: 2003.
- Kendall PC. Directing misperceptions: Researching the issues facing manual-based treatments. *Clinical Psychology: Science and Practice*. 1998; 5:396–399.
- Lieberman AF, Weston DR, Pawl JH. Preventive intervention and outcome with anxiously attached dyads. *Child Development*. 1991; 62:199–209. [PubMed: 2022136]
- Lilienfeld SO. Psychological treatments that cause harm. *Perspectives on Psychological Science*. 2007; 2:53–70.
- Lieberman, AF.; VanHorn, P. *Don't hit my mommy! A manual for child-parent psychotherapy with young witnesses of family violence*. Zero to Three Press; Washington, DC: 2004.

- Mercer J. Attachment therapy: A treatment without empirical support. *Scientific Review of Mental Health Practice*. 2002; 1:105–112.
- Noam G. Development as the aim of clinical intervention. *Development and Psychopathology*. 1992; 4:679–696.
- Renninger, KA.; Sigel, IE.; Damon, W.; Lerner, R., editors. *Handbook of child psychology*. 6th. John Wiley & Sons, Inc; New York: 2006. p. 200
- Reynolds AJ, Temple JA, Ou S, Roberston DL, Mersky JP, Topitzers JW, et al. Effects of a school-based, early childhood intervention on adult health and well-being. *Archives of Pediatric and Adolescent Medicine*. 2007; 161:730–739.
- Rossello J, Bernal G. The efficacy of cognitive-behavioral and interpersonal treatments for depression in Puerto Rican adolescents. *Journal of Consulting and Clinical Psychology*. 1999; 67:734–745. [PubMed: 10535240]
- Schoenwald, SK.; Henggeler, SW.; Lebow, JL. *Handbook of clinical family therapy*. Wiley; Hoboken, NJ: 2005. Multisystemic therapy for adolescents with serious externalizing behavior; p. 103-127.
- Shirk SR, Talmi A, Olds D. A developmental psychopathology perspective on child and adolescent treatment policy. *Development and Psychopathology*. 2000; 12:835–855. [PubMed: 11202046]
- Shonkoff J. Science, policy, and practice: Three cultures in search of a shared mission. *Child Development*. 2000; 71:181–187. [PubMed: 10836572]
- Sigel, IE. Research to practice redefined. In: Damon, W.; Lerner, R.; Renninger, KA.; Sigel, IE., editors. *Handbook of child psychology*. 6th. John Wiley & Sons, Inc; New York: 2006. p. 1017-1023.
- Toth, SL.; Cicchetti, D. Developmental psychopathology and child psychotherapy. In: Russ, S.; Ollendick, T., editors. *Handbook of psychotherapies with children and families*. Plenum; New York: 1999. p. 15-44.
- Toth SL, Cicchetti D, Macfie J, Maughan A, VanMeenen K. Narrative representations of caregivers and self in maltreated pre-schoolers. *Attachment and Human Development*. 2000; 2:271–305. [PubMed: 11708220]
- Weisz JR, Jensen-Doss A, Hawley KM. Evidenced-based youth psychotherapies versus usual clinical care: A meta-analysis of direct comparisons. *American Psychologist*. 2006; 62:672–689.
- Werch CE, Owen D. Iatrogenic effects of alcohol and drug prevention programs. *Journal of Studies on Alcohol*. 2002; 63:581–590. [PubMed: 12380855]
- Zero-to-Three. *Diagnostic Classification: 0-3 R*. Author; Washington, DC: 2006.
- Zigler E. A place of value for applied and policy studies. *Child Development*. 1998; 69:532–542.

Table 1

Potential challenges to translating research into practice and lessons learned through work conducted at Mt. Hope Family Center

Research to Practice Challenges	Lessons Learned
Lack of shared language and concepts	<ul style="list-style-type: none"> • Provide free, ongoing training to the community, especially county administrators and line staff on child development, psychopathology, and prevention science • Partner with local providers to provide training and supervision opportunities and increase community knowledge base and expertise
Efficacy versus Effectiveness	<ul style="list-style-type: none"> • Reduce exclusion criteria to minimum to replicate “real-world” clients • Create university/community partnerships which pair clinical service with research-quality assessments and training
Developmental appropriateness	<ul style="list-style-type: none"> • Assure that interventions incorporate knowledge of child development throughout the program rather than being scaled-down adult treatments • Include comparable control groups that are equivalent to the intervention population in all ways but the targeted problem so that changes attributable to normal development can be assessed
Cultural relevance	<ul style="list-style-type: none"> • Assure that researchers interact with the target population clinically to inform their scientific work • Recruit ethnoculturally diverse samples by partnering with the community
Recruiting diverse groups	<ul style="list-style-type: none"> • Fund shared staff that can recruit, but also provide a valuable service to the community partner • Partner with local agencies, who often have staff members that are more representative of the target community
Conducting high-quality, developmentally-informed assessments	<ul style="list-style-type: none"> • Pilot assessments prior to their inception to maximize information and minimize time • Assess participant’s experiences at assessment visits to determine the need for potential adjustments
Funding	<ul style="list-style-type: none"> • Sustainability plans should begin with the project • Multiple funding streams should be identified
Quality Training	<ul style="list-style-type: none"> • Partner with community agencies and providers to increase quality training and dissemination of evidenced based practices • Educate community funders on the costs associated with training, supervision and caseloads to ensure delivery of quality clinical interventions