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# Toward Dynamic Adaptation of Psychological Interventions for Child and Adolescent Development and Mental Health

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Children's and adolescents' mental health needs emphasize the necessity of a new era of translational research to enhance development and yield better lives for children, families, and communities. Developmental, clinical, and translational research serves as a powerful tool for managing the inevitable complexities in pursuit of these goals. This article proposes key ideas that will strengthen current evidence-based intervention practices by creating stronger links between research, practice, and complex systems contexts, with the potential of extending applicability, replicability, and impact. As exemplified in some of the articles throughout this special issue, new research and innovative implementation models will likely contribute to better ways of assessing and dynamically adapting structure and intervention practice within mental health systems. We contend that future models for effective interventions with children and adolescents will involve increased attention to (a) the connection of research on the developmental needs of children and adolescents to practice models; (b) consideration of informed contextual and cultural adaptation in implementation; and (c) a rational model of evidence-based planning, using a dynamic, inclusive approach with high support for adaptation, flexibility, and implementation fidelity. We discuss future directions for translational research for researchers, practitioners, and administrators in the field to continue and transform these ideas and their illustrations.

The discourse on healthy development of children and adolescents has stimulated much discussion among scientists, practitioners, and policymakers at the beginning of the 21st century.

Clearly much progress has been made in tackling the complexities involved in increasing our understanding of how to promote healthy, responsible, and productive youth. Current developmental research has provided strong evidence for normative and atypical pathways and their underlying neural systems (see Pollak, 2015), allowing for increasingly systematic translation into intervention approaches, programs, and policies. In addition, a plethora of intervention research in the past few decades has led to widespread knowledge regarding how to promote child and adolescent development,

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learning, and mental health. Thus, much progress has been made to close the gap between research and practice in order to deliver effective interventions to our communities and society at large. Nevertheless, many questions remain unanswered. Most prominent, we are still far from understanding if our intervention activities are “good enough” for administration and whether we need to consider core features and adaptive components of interventions in future research and practice to respond to this question.

Based on the articles published in this special issue and a selected review of recent literature in this area, this article identifies key ideas and examples of models aimed at preserving and refining *existing* evidence-based practices. The overt goal is to stimulate a discussion around how to better translate research into practice for successful implementation of evidence-based programs/techniques and contribute to new, innovative intervention research. The ideas presented here are meant to contribute to reflection on two questions: (a) What are effective practices in developmentally informed mental health intervention research with children and adolescents, and (b) what future efforts should be considered in shaping adaptations and innovative approaches to research and practice in our field?

## THE CHALLENGE

Despite previous efforts and an increasing body of research in this area, there are still several questions and challenges when identifying and implementing current evidence-based interventions. These questions pertain to decisions about what results constitute a “good-enough status” for administration to different populations, as well as their developmental needs and contextual specificities. For example, Garber and Brunwasser (2016) explore the effectiveness and dissemination of current depression prevention programs for youth. Although several of these programs have demonstrated efficacy, none of them have shown convincing effectiveness under real-world conditions. Thus, widespread dissemination in this area seems not (yet) possible.

Related to the question of large-scale effectiveness is the concern of how little we know about active moderators and mediators of treatment effects, especially in real-world settings. For example, Costello (2016) discusses the question of if and how timing of risky experiences (e.g., bullying in childhood, adolescence, or both) and key areas of vulnerability moderate and mediate intervention effects on mental health outcomes. These and other studies on moderators and mediators are essential to ensure better implementation quality in large-scale applications. Simultaneously, several prevention and intervention programs that have shown effectiveness only under more or less ideal conditions for treatment implementation or within small-scale pilot studies have been on the market for many years and are currently implemented without showing strong evidence on a large scale.

There also remains a significant gap between knowledge of evidence-based practices and how to widely implement them with high fidelity (Metz & Bartley, 2012). However, there is good reason to believe that large-scale dissemination requires dynamic adaptation of interventions. This latter term refers to the discussion around core principles of interventions and adaptive features, such as flexibility around the decision of which evidence-based curricula to choose for a specific behavioral issue, the use of modular designs to therapeutic interventions (e.g., Chorpita, Daleiden, & Weisz, 2005; Weisz et al., 2012), or the adaptation of scripts and activities to train core features (e.g., Rotheram-Borus, Swendeman, & Becker, 2014). Dynamic adaptation of mental health prevention and developmental intervention approaches thus refers to a process of flexible decision making regarding the selection, implementation, and evaluation of evidence-based practices and approaches to enhance child mental health and development so that it is tailored to a given context, population, and need (see Aarons et al., 2012; Huey & Polo, 2008). Similarly, creativity and openness to integrate new efforts into existing institutional structures, service agencies, and communities are needed (for examples of initiatives to build collaborative systems and improve performance and effective large-scale dissemination, see Chorpita & Daleiden, 2014).

Because we live in a highly diversified world, it is likely that evidence-based prevention and treatment models need to be adjusted to serve the respective populations in specific contexts in the best ways possible. For example, one theme of this special issue focuses on the question of whether (and how much) existing evidence-based intervention programs can be adopted or need to be adapted to different cultural conditions, ethnic minority populations, or local settings. A related question is the need to identify and utilize the core features of intervention models that are beneficial across individuals, settings, and evidence-based practices (Beelmann, 2011; see Huey & Polo, 2008).

Therefore, what are current problems with evidence-based interventions? We discuss three major questions that belong to this debate of how to implement evidence-based approaches and interventions. The first is the question of developmental differentiation. The second is the question of cultural and contextual adaptation in an increasingly diverse modern society. The third is how one can move from single evidence-based programs to effective systems in order to address well-being and mental health in the broader context of development and learning of all children. We discuss these questions based on the perspectives that are brought together in this special issue and in relation to recent discussions on this topic, which is by no means intended to be an exhaustive review. Rather, we discuss selected studies to illustrate central arguments and identify current strengths and challenges in this area of research.

## ARE INTERVENTIONS GOOD FOR ALL CHILDREN AND ADOLESCENTS? DEVELOPMENTAL DIFFERENTIATION

There is consensus among developmental psychologists and intervention researchers that developmental research should guide the design and planning of interventions, for example, by actively including empirical results on risk and protective factors and their contributory role in the program model, as well as when formulating the program theory and the intervention design (Beelmann, 2011). However, many existing prevention and intervention programs and approaches are still not fully sensitive to the developmental needs of the individual child or adolescent or to the variability of developmental needs within and across grades. For example, Malti, Chaparro, Zuffianò, and Colasante's (2016) meta-analytic review shows that current social-emotional learning programs with strong empirical support do not consider developmental differences on relevant target constructs, such as interindividual differences in prosocial behavior, within grades. Therefore, developing research and practical strategies on how to adapt intervention programs to developmental differences is one of the greatest challenges for future research. Although there is wide consensus at the conceptual level that we need developmental differentiation (e.g., Malti, 2016; Southam-Gerow & Kendall, 2002), the aforementioned and recent evaluations of practices show that there is a gap between developmental theory and the implementation of developmentally sensitive practice. In other words, much remains to be done to strengthen the link between developmental research, program theory, and intervention practice. Conceptually, this requires a thorough understanding of how age-related changes in general and interindividual differences in intraindividual change, in particular, matter for designing interventions. Practically, this calls for assessment of individual developmental needs, risks, and potentials to tailor the treatment accordingly in a developmentally sensitive manner. Both aspects require the systematic study of normative and atypical developmental processes in field settings, the study of risk and protective factors that have the potential to influence intervention effects, and the identification of moderators and mediators of intervention effects that explain mechanisms of change.

What is meant by developmental differentiation can be further illustrated by two key issues that have been debated in the literature: the role of developmental and clinical knowledge in intervention programming, and the matter of timing (see Malti et al., 2016). The first developmental differentiation issue discussed is how differences in child development shape intervention efforts. A developmental perspective places symptoms and strengths within the context of a young person's development and thus helps us understand what they mean. From this perspective, it is critical to conceptualize the emergence of mental health problems as a developmental disorder stemming from children's and adolescents' developmental

histories, including their life experiences embedded in their social contexts, and inherited genetic predispositions. There is empirical evidence suggesting that some strategies are more effective with certain children and families than others. One of the reasons for this is that children may have significant developmental differences at baseline. For example, although some children may show high levels of empathy and social-emotional development, others may not yet have very differentiated social-emotional skills. These baseline differences may have an immediate effect on many of the outcomes that social-emotional learning programs target because the children may or may not understand the skills being taught. Therefore, we aim to discuss the need for and meaning of developmentally tailored intervention strategies, for example, when adjusting existing psychotherapeutic strategies to lower (or higher) developmental levels or designing specific strategies for different periods of development. The need for these alterations is seen in a study by Ng, Eckshtain, and Weisz (2016). The researchers asked middle schoolers with depressive symptoms to identify the coping strategies they used when they feel sad and compared these responses with evidence-based psychotherapy components. They found that the higher the depression symptom level, the less likely youths were to use strategies identified by researchers and perceived by themselves as effective. This mismatch between existing therapeutic components and youths' perceptions of effective components in coping with depression illustrates how our understanding of youths' perspectives of their developmental needs can inform the design and adaptation of intervention strategies.

Similarly, interindividual variability in children's ability to *adapt to adversity* is rarely considered in intervention efforts, and even less is known about the differential influence of risk and protective factors on intervention effects. The effects of risk factors on developmental differences in physiological, neurobiological, and emotion systems, as well as related mental health outcomes, are largely nonspecific. This is, in part, because adversity and risk can be reduced by children's developmental ability to adapt to risk exposure. These processes of adaptation can resist the negative effects of stress on the child. For example, positive temperamental features with the presence of parental alcoholism can serve as a protective factor and explain why some children adapt positively despite stressful environments.

These examples illustrate that an intervention that calls itself developmental needs to go beyond the adoption of general learning principles. Rather, a *dynamic adaptation* of such principles to the child's respective developmental needs at a given time and in a given context is required. Similarly, the differential-susceptibility theorizing has directed attention toward variation in response to positive and adverse experiences on child development and has argued for the need to consider genetic factors to understand what works for whom (Belsky & van Ijzendoorn, 2015). It is also likely that the design of strategies for a specific developmental period can be beneficial because each one is

characterized by certain key issues of vulnerability and potential. We and others have therefore argued that this requires not only a sensitive analysis of developmental levels associated with problem behaviors and learning but also systematic implementation of developmentally tailored assessment and intervention techniques (see Garber & Brunwasser, 2016; Malti et al., 2016). Future research should examine how intervention strategies that are based on principles of development can be tailored to the specific needs of different risk groups, as well as intensity of symptoms (Malti & Noam, 2009; Ng et al., 2016). There is currently limited knowledge about the extent to which the tailoring of intervention strategies to specific needs increases their effectiveness and to which extent it would be practically desirable.

The second developmental differentiation issue discussed is that relatively little is known about how timing matters. Timing here is defined as the question regarding the optimal point in development to intervene. In other words, are there critical developmental periods to intercede, and is it always recommendable to implement preventions as early as possible? Or is it sometimes better to intervene later, and if so, when and why? This means that we have to understand the dynamic of normal and deviant developmental processes at different points of development to formulate specific developmental theories about the emergence of emotional and behavioral problems. Specific developmental theories (e.g., on social development) could provide insight into windows of opportunities (Masten, 2009) or particularly suitable periods that should affect the selection of intervention targets (e.g., parents, peers, or children), content (e.g., parenting vs. relationship between parents), and strategies (e.g., according to intervention methods, setting, etc.). For example, an evidence-based risk model for the development of early antisocial behavior according to the life-long persistent developmental pathway suggests different prevention measures at different time points to interrupt this deviant developmental course (Beelmann, 2011; Lösel & Bender, 2003). As a result, the application of parent training programs at early stages of the pathway (e.g., with parents of preschool children) would probably make sense, whereas preventive work within the peer group might be particularly effective in early adolescence. This and other examples speak for intensifying theories of child development and the emergence of emotional and behavioral problems over the course of development from birth to adulthood for a better understanding of appropriate intervention timing.

#### ARE INTERVENTIONS GOOD FOR ALL CIRCUMSTANCES? CONTEXTUAL AND CULTURAL ADAPTATION

A related issue is that current interventions are not adaptive enough in terms of the context and specific requirements of different cultural settings. It is highly questionable that the

same programs, techniques, and strategies are equally effective and appropriate in multiple contexts. Rather, parental cultural beliefs, cultural norms and values, and originator biases (to name just a few) are all factors that likely influence program effectiveness. Most existing lists of evidence-based programs refer to North American research, which is widely disseminated throughout the world. But what about transportability across countries, ethnic minority groups within a country, and diverse communities?

Much of the existing evidence relevant to practitioners and policymakers continues to originate from pilot studies conducted under relatively ideal conditions. When applied to more generic settings where practitioners work, conditions are often highly complex and require flexible responses, which cannot be exhaustively represented in a manual. What kinds of adaptations are needed for different cultural and subcultural contexts and for different contexts of risk and resilience?

Research indicates that culturally and contextually sensitive intervention, as well as an awareness of diversity, is a matter of intervention content, administration, and conduct (see Huey & Polo, 2008). Naturally, interventions should be tailored to known risk and protective factors in a specific (cultural) context (see American Psychological Association, 2003). Similarly, the intervention administration (i.e., used methods, techniques, and materials) should be appropriate for the target group within the cultural context. Lastly, both intervention content and intervention administration should not contradict each other, or at the very least should require sensitivity to norms and values within a special culture, community, and/or racial or ethnic minority group. For example, parenting and family structure is found to be highly dependent on cultural beliefs and orientations (e.g., the role of mothers/fathers within the family, corporal punishment as a mean of education, gender differences in parenting; see, e.g., Bornstein, 2010; Crippen & Brew, 2007). Therefore, parenting interventions need to be sensitive in content and administration when promoting parenting skills in diverse family populations (Kumpfer, Magalhaes, Xie, & Kanse, 2016).

Another important issue is that implementation fidelity in different contexts needs to be monitored closely to better understand how interventions might work in different settings and under diverse conditions. More specific knowledge about the interaction between the outcomes of a certain intervention and the relevant situational, contextual, and cultural variables should lead to more situational flexibility when transporting program manuals, without neglecting the conceptual foundation of an intervention.

Taken together, an intervention framework not only needs to be situated in the developmental reality and potential of each child but also needs to consider context and cultural appropriateness, which pertains to the content, administration, delivery format, and finally implementation of the approach (see Beidas & Kendall, 2014; Castro, Barrera, & Holleran Steiker, 2010). In addition, we must



study the transportability of intervention approaches across contexts and cultures more intensively to identify critical variables that affect and interfere with transportability.

Findings from two articles in this special issue reveal conflicting evidence regarding the question of national/regional transportability of evidence-based intervention (adoption) versus the need for adaptation. Specifically, Gardner, Melendez-Torres, Leijten, and Montgomery (2016) investigated the transportability of parenting interventions for reducing child behavior problems. The authors found trials of four interventions, originating in the United States or Australia, tested in 10 countries in five regions. They found that interventions transported to Western countries showed comparable effect sizes to trials in the original countries. Of interest, however, effects were higher when interventions were transported to countries that were culturally different in service provision than those in which they were developed. This result offers some support for the idea that extensive adaptation is not strictly necessary for successful transportation. In contrast, Sundell, Beelmann, Hasson, and von Thiele Schwartz (2016) found that simple adoption of programs was not effective in transporting programs to different national/regional contexts. The study found that novel programs were more effective than adopted programs in a German sample of studies, whereas adapted and novel programs both were slightly more effective than adopted programs in a Swedish sample of studies. These findings speak to the idea that novel or extensively adapted programs may be more effective than adopted programs.

There are several explanations for these mixed results on adaptation and adoption. For example, according to Sundell, Ferrer-Wreder, and Fraser (2014), divergent results between studies on intercultural replication of a certain intervention may be attributed to (a) methodological differences between evaluation studies conducted in different contexts, (b) ambiguities in the contextual adaptation process (e.g., differences in how adaptations were done), (c) the implementation quality of a national/regional replication of an intervention, and (d) real contextual influences (e.g., type of social care system where the intervention was implemented) that affect the outcomes of a transported intervention. However, because several of the variables that might affect transportability to diverse cultural contexts are not assessed or reported in most existing published trials, our understanding of the variables that may reasonably contribute to a successful or an unsuccessful adoption or adaptation of a program or intervention is still limited. Future research is required to investigate the potential and limitations of program adaptation and transportability more closely. As recommended by Huey and Polo (2008), more research with culturally sensitive conceptual models, sound research designs, and appropriate sample sizes is warranted to disentangle ambiguous findings.

Despite these challenges, transportability is not always complex or hard to establish. One promising example for the potential of cross-national transportability without extensive transportation is the evaluation of an Austrian

program called ViSC, a socioecological antibullying program that aims to prevent bullying on different levels of the educational system. The program, based on a cascaded train-the-trainer model, has shown effectiveness in Austria and has recently been transported to Cyprus (Solomontos-Kountori et al., 2016). Using a quasi-experimental longitudinal design with more than 1,700 seventh and eighth graders, the findings revealed that only minor adaptations were necessary to respond to educational and cultural particularities in Cyprus. The authors concluded that cross-national dissemination of this prevention program with high implementation fidelity is possible.

### HOW CAN WE MAKE INTERVENTIONS BETTER FOR ALL? STRUCTURAL SYSTEMS FOR ROLLOUT

One challenge that current practice faces is that evidence-based intervention approaches exist but many have shown weaker effects and are less robust in real life upon application (e.g., Santucci, Thomassin, Petrovic, & Weisz, 2015; Weisz, Krumholz, Santucci, Thomassin, & Ng, 2015; Weisz, Ugueto, Cheron, & Herren, 2013). Can we learn from medical research, especially medication trials and procedural approvals, as well as evidence-based policy and large-scale health promotion programs? The question of what we can adapt from medical and pharmaceutical research is increasingly important. This includes the use of formal decision-making guidelines, experiences of passing judgments for administration under conditions of uncertainty (e.g., due to lack of validity), or the use of reporting guidelines that have to be in place for the publication of evaluative research findings. The medical system of approval may be too strict for child and adolescent prevention and intervention programs, because the risk for harmful effects on healthy child development is typically minimal. Nonetheless, there are negative consequences of intervention results that must be monitored carefully. For example, until relatively recently the “treatment of choice” after a suicide in a school was to discuss the suicide schoolwide. Clusters of suicide and the contagion effect had not yet been researched. Similarly, after trauma the idea was to discuss it so as to avoid “sealing over” and increasing the chances of posttraumatic stress. We now know this was a bad idea. Equivalently, intervention group programs for delinquent youth turned into a testing ground for new delinquent strategies and often resulted in increased aggression (e.g., Dishion, McCord, & Poulin, 1999). Of course, corrections based on evidence will typically be made in the long term, as shown in the three preceding examples; however, medicine ultimately aspires to implement a proactive system of proof, not a retrospective one. In the domain of psychological intervention, we are following many models simultaneously with no rules as to when a program can be marketed and distributed. There are few areas with less consumer

protection than this one, except perhaps in education. Therefore, in addition to a dynamic developmental and contextual adaptation framework, the field must create integrated systems of support to deliver intervention approaches more effectively.

To date, one of the core remaining challenges is that systems serving children and youth are highly fragmented. Here, systems refers to an empirically informed approach that coordinates evidence-based methods in a given service array. Such systems often include attempts to build and coordinate collaborative efforts to guide direct service, supervision, training, and data management and implementation components (e.g., see Chorpita & Daleiden, 2014). Here, we focus on the school environment because many child and youth mental health services are delivered in school and after-school settings. At the same time, various conceptual, methodological, and logistical challenges exist that threaten high-quality implementation and dissemination (see Weist et al., 2014). To give one example, the leadership team must deal with the district's (or other local or governmental agency's) choice of educational programs in a typical school. Requirements increasingly include programs regarding school safety, antiviolence, positive school climate, systematic behavior management, positive relationship improvement, antibullying, antisuicide, anti-drop-out, antipregnancy, anti-drug and alcohol, prosocial and empathy development, resilience development, and much more. There is no way a school or a district can implement all or even some interventions or specialize these programs for specific subgroups of students. Furthermore, the strongest interventions require teacher training, an administration committee, a process of testing fidelity, and some form of evaluation. Finally, student and parent involvement in setting the norms through which the programs can thrive needs to be considered. This example illustrates that although we are debating the quality and dissemination of intervention programs and strategies, the typical institutional settings in which they are administered require support in the decision-making process and implementation.

One important question is, what system of support, collaboration, and organization should be established so that schools (and related service providers) can choose and implement evidence-based practices for children? Can specific interventions be connected to other interventions so that they can be administered to all students? In the case of antibullying interventions, can empathy-enhancing strategies become a focal point that reduces not only bullying but also delinquency, violence, and school behavior problems? In other words, one would have to build modules that schools can choose from, with certain underlying principles. Second, one has to consider what system a school or community has to possess in order to coordinate early warning and detection of problems and to tailor

evidence-based intervention programs. There is also a need to address the service gap when systematic screenings are implemented, as they are likely to reveal high numbers of children in need of clinical care (see Costello, 2016). There are some promising initiatives to target such children in school contexts. For example, the Targeted Mental Health in Schools programme funded mental health provisions in schools for children at risk for, or already displaying, mental health problems, which resulted in the reduction of behavior problems (Wolpert, Humphrey, Belsky, & Deighton, 2013). In addition, demonstration projects can help test whether intervention practices can become a systemic part of existing service structures. Kendziora, Osher, and Weissberg (2016) demonstrate that school districts that participated in the Collaborating Districts Initiative were able to implement this framework and make the promotion of social and emotional development a part of their policies and priorities.

In line with these findings, Gbate (2016) argues that the field needs to move beyond a focus on individual programs and experimental research on their effectiveness. Implementation science and practice provides a lens that can help sustain effectiveness, including a better understanding and use of the architecture of existing systems, a comprehension of the implementation process as a series of distinct but nonlinear stages, and analysis of implementation challenges using frameworks of implementation drivers (see Bumbarger & Perkins, 2008). The author emphasizes that the way in which services are offered may matter more than their specific content, and, important to note, how they adapt to local context may determine their sustained usefulness.

## CONCLUSIONS AND MOVING TOWARD SOLUTIONS

We have discussed three issues regarding core features and adaptation of interventions for reducing child and adolescent mental health problems and for enhancing development and well-being. These issues relate to sensitivity to diversity and systematic consideration of inter- and intraindividual differences in child and adolescent development; culture and context in which the child (and the intervention) is embedded; and the creation of collaborative, flexible, and dynamic systems of support in the school setting (see Chorpita & Daleiden, 2014; Payne & Eckert, 2010; Peurach & Glazer, 2012). We have discussed if and how adaptation of existing practice in each of these domains matters for improving service delivery in school settings. In the following sections, we provide some preliminary conclusions derived from the articles in this special issue, the extant previous literature in these areas, and our own reasoning, and we make some suggestions for potential solutions to address current gaps in the research.

### Child Development, Core Features, and Dynamic Adaptation of Intervention

Given the dynamic nature of child and adolescent development, this special issue has made clear that one challenge any intervention approach faces is to become truly developmental. In other words, how can adaptations justly respond to the developmental needs of children but remain evidence based and replicable? Development goes beyond chronological age and refers to a child's developmental capacities, including various dimensions of development at any point in time (see Malti et al., 2016). More research is needed to understand if and how developmentally sensitive interventions need to be designed, both across grades and within grades, as well as brought to scale, including early detection (i.e., developmentally sensitive screenings and assessments), training of practitioners, and so on (Collins et al., 2011; see Costello, 2016; Malti et al., 2016; Ng et al., 2016; Malti, Zuffianò, & Noam, 2016; Patel, Flisher, et al., 2007).

### Context, Diversity, and Dynamic Adaptation of Intervention

Given the highly contextualized nature of interventions, another challenge is how to become adaptive yet maintain stringent principles across a broad and diverse range of contextual settings and diverse populations. We believe that recent research has already tackled the issue of cultural and contextual adaptation to meet the needs of different cultures, ethnic groups, minority groups, and/or local conditions. More research in this area can yield the evidence that is needed to bring about practical change, for example, more evidence-based recommendation within the program manuals about what could or should be changed according to cultural aspects when conducting interventions, without losing its conceptual fidelity. However, it is also important to reconsider how adaptations to settings should be made in general (Castro et al., 2010; Sundell et al., 2014). Specifically, all too often there is a lack of theoretical guidance and absence of an explanation of the core principles that guide the intervention practice (Blase & Fixsen, 2013). Others have argued that the surface structure of an intervention (e.g., intervention materials, language, etc.) should be a candidate of adaptation, whereas the deep structure (e.g., the causal model of an intervention) is to remain unchanged (Resnicow, Soler, Braithwaite, Ahluwalia, & Butler, 2000). These are important steps to discussing the adaptability and transportability of interventions in more detail. In addition, further intervention research should systematically compare different types of adaptation and cultural transportation by using empirically derived frameworks, standardized systems, and protocols (see Okamoto, Kulis, Marsiglia, Holleran Steiker, & Dustman, 2014; Stirman, Miller, Toder, & Calloway, 2013; Sundell et al., 2014).

### System Integration, Collaboration, and Dynamic Adaptation of Intervention

Last, one continuous struggle that has been discussed in this special issue has to do with how to reduce fragmentation across settings and build integrated, collaborative systems of support and practice. At the broadest level, this certainly requires systemic change. For instance, many mainstream services including social services and education systems include a wide range of intervention strategies (Eisner & Malti, 2012; Little, 2010). Yet these activities are typically less systematically evaluated, and we therefore know less about their effectiveness. We have argued elsewhere that such strategies may not be better or worse than a manualized intervention program approach but rather that it is a question of how well they align with developmental principles and whether they are able to dynamically adjust to contextual specificities and be integrated and adapted to existing systems (Eisner & Malti, 2012; Ghate, 2016; Rohrbach, Grana, Sussman, & Valente, 2006). At the same time, systems that can scale up preventive interventions have been worked out in principle (see Collins et al., 2011; Costello, 2016). Systematic monitoring, process evaluations, and demonstration projects can help capture the guidelines, challenges, and constant changes that one has to navigate when implementing intervention practices into real-world settings. In addition, more attention to intervention and research design factors, such as intervention delivery, appropriate evaluation approaches, costs, and so on, is warranted to improve uptake of promising strategies into practice (see Milat, King, Bauman, & Redman, 2013). Results from intensive implementation research and comprehensive models of implementation systems deliver close insights into how to transfer intervention programs and innovations to routine practice (Beelmann & Karing, 2014; Meyers, Durlak, & Wandersman, 2012; Spoth et al., 2013). All of these issues will help us move toward more integration of evidence-based practices into existing practices, priorities, and social policies.

In conclusion, research and practical strategies on how to adapt interventions dynamically to developmental differences, cultural and contextual settings, system setups, and existing structures are strongly warranted. One step toward becoming more developmental is to utilize screening and assessment methods and implement early detection systematically to inform best practice. For example, the Communities That Care approach (Hawkins, Catalano, & Arthur, 2002) combines strategies of systematic assessments of risk and protective factors within a certain community with establishing local prevention networks for implementing tailored, evidence-based prevention programs. This approach is a good example of the incorporation of scientific knowledge from different research fields (e.g., developmental psychopathology, systematic assessment, implementation research, evaluation studies) to improve the administration of evidence-based practices.



Interventions are likely more culturally and contextually sensitive if they pay close attention to cultural and contextual issues when designing the conceptual model and theory of change. Although this does not necessarily imply that major adaptations have to be made when transporting practices to different cultural and/or contextual settings, it does indicate an awareness of cultural and ethnic diversity and corresponding differences in values, norms, and traditions that are likely going to influence any intervention's efficacy and effectiveness. It will also be important to disentangle the current inconsistencies and pose questions regarding the need to adapt interventions when transporting them to different countries and settings. As Berry (2015) recently pointed out, this increased awareness of intercultural validity will be necessary not only for intervention research but for psychological research in general (see also Huey & Polo, 2008). On the training level, the ability to adapt interventions to better meet developmental and contextual needs requires a core clinical and developmental skill set, such as a sound knowledge of cognitive-behavioral treatment principles and an understanding of normative developmental pathways. For implementation purposes on a larger scale, creativity is needed to combine and integrate developmentally and culturally responsive methods, as well as preventive and early intervention practices in school (or other) settings with screenings, assessments, and clinical treatment strategies. One example would be to search for alternative models for delivering mental health treatments in pediatric health care, including training the primary care provider in mental health skills (Kolko & Perrin, 2014). The training of practitioners in school settings is another promising strategy to high-quality dissemination (Rotheram-Borus et al., 2014). Ultimately, this may help practitioners not only to apply developmental principles and core intervention strategies but also to identify individual needs of children and adapt for developmental variability and ethnic diversity.

Another step toward solutions is to shift focus from programs to systems and gather an understanding of the best practices that can be dynamically adapted to the changing demands of a complex system that is organized within a set of principles, decisions, and structures. This dynamic process involves evidence-based practice adaptations, as well as systemic and organizational adaptations, implemented in a consistent yet flexible manner. This includes a data-informed, collaborative, inclusive approach with high support for adaptation and implementation fidelity (Aarons et al., 2012). In addition, this not only requires the establishment and maintenance of strong relationships between implementation agencies and the program developer and an inclusive communication between key stakeholders (see Bumbarger & Campbell, 2012; Hurlburt et al., 2014; Panzano, Sweeney, Seffrin, Massatti, & Knudsen, 2012; Rhoades Cooper, Bumbarger, & Moore, 2013; Supplee & Metz, 2015) but also necessitates a discussion on how to create continuous feedback loops between implementation

and evaluation research, policy, and practice (Aarons et al., 2014). Relatedly, practice change requires modifications in everyday routines and activities of everyone who is involved in the intervention process: children, families, practitioners, researchers, and policymakers. Only by increasing collaboration between various stakeholders and between academic institutions, practice, and policy settings can we reduce the gap between knowledge advancement and implementation of sound intervention practices (see Gambrill, 2015). Last, there is a need to develop and disseminate guidelines for decision making under uncertainty (i.e., what is disseminated and why). The seemingly simple question of what kind of external validity is considered good enough for administration remains unanswered. We live in a time when researchers very often focus on marketing "their" programs globally rather than contributing to more robust evidence, (i.e., by making their data available for secondary analysis or replication). Yes, much progress has been made to close the gap between research and practice, implement collaborative systems of research and service, and deliver effective interventions on a large scale to our communities. We hope the articles of this special issue can contribute to a continued discussion, creative thinking, and innovative approaches that respond to some of the most pressing questions regarding how to incorporate contextual variation and child development dynamically in current and future research–practice partnerships.

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#### REFERENCES

- Aarons, G. A., Fettes, D. L., Hurlburt, M. S., Palinkas, L. A., Gunderson, L., Willging, C. E., & Chaffin, M. J. (2014). Collaboration, negotiation, and coalescence for interagency-collaborative teams to scale-up evidence-based practice. *Journal of Clinical Child & Adolescent Psychology*, 43(6), 915–928. doi:10.1080/15374416.2013.876642
- Aarons, G. A., Green, A. E., Palinkas, L. A., Self-Brown, S., Whitaker, D. J., Lutzker, J. R., ... Chaffin, M. J. (2012). Dynamic adaptation process to implement an evidence-based child maltreatment intervention. *Implementation Science*, 7(1). doi:10.1186/1748-5908-7-32
- American Psychological Association. (2003). Guidelines on multicultural education, training, research, practice, and organizational change for psychologists. *American Psychologist*, 58(5), 377–402. doi:10.1037/0003-066X.58.5.377

- Beelmann, A. (2011). The scientific foundation of prevention. The status quo and future challenges of developmental crime prevention. In T. Bliesener, A. Beelmann, & M. Stemmler (Eds.), *Antisocial behavior and crime. Contributions of developmental and evaluation research to prevention and intervention* (pp. 137–164). Cambridge, MA: Hogrefe.
- Beelmann, A., & Karing, C. (2014). Implementationsfaktoren und -prozesse in der Präventionsforschung: Strategien, Probleme, Ergebnisse, Perspektiven. [Implementation factors and processes in prevention research: Findings, strategies, problems, prospects]. *Psychologische Rundschau*, 65(3), 129–139. doi:10.1026/0033-3042/a000215
- Beidas, R. S., & Kendall, P. (Eds.). (2014). *Dissemination and implementation of evidence-based practices in child and adolescent mental health*. New York, NY: Oxford University Press.
- Belsky, J., & van Ijzendoorn, M. H. (2015). What works for whom? Genetic moderation of intervention efficacy. *Development and Psychopathology*, 27(1), 1–6. doi:10.1017/S0954579414001254
- Berry, J. W. (2015). Global psychology: Implications for cross-cultural research and management. *Cross Cultural Management*, 22(3), 342–355. doi:10.1108/CCM-03-2015-0031
- Blase, K., & Fixsen, D. (2013). *Core intervention components: Identifying and operationalizing what makes programs work*. Retrieved from [http://aspe.hhs.gov/hsp/13/KeyIssuesforChildrenYouth/CoreIntervention/rb\\_CoreIntervention.cfm](http://aspe.hhs.gov/hsp/13/KeyIssuesforChildrenYouth/CoreIntervention/rb_CoreIntervention.cfm)
- Bornstein, M. H. (2010). Parenting. In M. H. Bornstein (Ed.), *Handbook of cultural developmental science* (pp. 259–277). New York, NY: Psychology Press.
- Bumbarger, B. K., & Campbell, E. M. (2012). A state agency–university partnership for translational research and the dissemination of evidence-based prevention and intervention. *Administration and Policy in Mental Health and Mental Health Services Research*, 39(4), 268–277. doi:10.1007/s10488-011-0372-x
- Bumbarger, B. K., & Perkins, D. F. (2008). After randomised trials: Issues related to dissemination of evidence-based interventions. *Journal of Children's Services*, 3(2), 55–64. doi:10.1108/17466660200800012
- Castro, F. G., Barrera, M., & Holleran Steiker, L. K. (2010). Issues and challenges in the design of culturally adapted evidence-based interventions. *Annual Review of Clinical Psychology*, 6, 213–239. doi:10.1146/annurev-clinpsy-033109-132032
- Chorpita, B. F., & Daleiden, E. L. (2014). Structuring the collaboration of science and service in pursuit of a shared vision. *Journal of Clinical Child and Adolescent Psychology*, 43, 323–338. doi:10.1080/15374416.2013.828297
- Chorpita, B. F., Daleiden, E. L., & Weisz, J. R. (2005). Modularity in the design and application of therapeutic interventions. *Applied and Preventive Psychology*, 11(3), 141–156. doi:10.1016/j.appsy.2005.05.002
- Collins, P. Y., Patel, V., Joestl, S. S., March, D., Insel, T. R., Daar, A. S., ... Walport, M. P. (2011). Grand challenges in global mental health. *Nature*, 475(7354), 27–30. doi:10.1038/475027a
- Costello, J. (2016). Early detection and prevention of mental health problems: Developmental epidemiology and systems of support. *Journal of Clinical Child and Adolescent Psychology*.
- Crippen, C., & Brew, L. (2007). Intercultural parenting and the transcultural family: A literature review. *The Family Journal: Counseling and Therapy for Couples and Families*, 15, 107–115. doi:10.1177/1066480706297783
- Dishion, T. J., McCord, J., & Poulin, F. (1999). When interventions harm: Peer groups and problem behavior. *American Psychologist*, 54, 755–764. doi:10.1037/0003-066X.54.9.755
- Eisner, M. P., & Malti, T. (2012). The future of research on evidence-based developmental violence prevention—Introduction. *International Journal of Conflict and Violence*, 6(2), 166–175.
- Gambrill, E. (2015). Integrating research and practice: Distractions, controversies, and options for moving forward. *Research on Social Work Practice*, 25(4), 510–522. doi:10.1177/1049731514544327
- Garber, J., & Brunwasser, S. (2016). Programs for the prevention of youth depression: Evaluation of efficacy, effectiveness, and readiness for dissemination. *Journal of Clinical Child and Adolescent Psychology*.
- Gardner, F., Melendez-Torres, G. J., Leijten, P., & Montgomery, P. (2016). Parenting interventions going global: A systematic review. *Journal of Clinical Child and Adolescent Psychology*.
- Ghate, D. (2016). From programs to systems: Deploying implementation science and practice for sustained real world effectiveness in services for children and families. *Journal of Clinical Child and Adolescent Psychology*.
- Hawkins, J. D., Catalano, R. F., & Arthur, M. W. (2002). Promoting science-based prevention in communities. *Addictive Behaviors*, 27(6), 951–976. doi:10.1016/S0306-4603(02)00298-8
- Huey, S. J., Jr., & Polo, A. J. (2008). Evidence-based psychosocial treatments for ethnic minority youth. *Journal of Clinical Child and Adolescent Psychology*, 37(1), 262–301. doi:10.1080/15374410701820174
- Hurlburt, M., Aarons, G. A., Fettes, D., Willging, C., Gunderson, L., & Chaffin, M. (2014). Interagency collaborative team for capacity building to scale-up evidence-based practice: Structure and process. *Children and Youth Services Review*, 39, 160–168. doi:10.1016/j.childyouth.2013.10.005
- Kenziora, K., Osher, D., & Weissberg, R. (2016). Promoting children's and adolescents' social and emotional development: District adaptations of a theory of action. *Journal of Clinical Child and Adolescent Psychology*.
- Kolko, D. J., & Perrin, E. (2014). The integration of behavioral health interventions in children's health care: Services, science, and suggestions. *Journal of Clinical Child and Adolescent Psychology*, 43(2), 216–228. doi:10.1080/15374416.2013.862804
- Kumpfer, K. L., Magalhaes, C., Xie, J., & Kanse, S. (2016). Cultural and gender adaptations of evidence-based family interventions. In M. J. van Ryzin, K. L. Kumpfer, G. M. Fosco, & M. T. Greenberg (Eds.), *Family-based prevention programs for children and adolescents: Theory, research, and large-scale dissemination* (pp. 256–281). New York, NY: Psychology Press.
- Little, M. (2010). *Improving children's outcomes depends on systemising evidence-based practice*. London, UK: Demos.
- Lösel, F., & Bender, D. (2003). Protective factors and resilience. In D. P. Farrington & J. W. Coid (Eds.), *Early prevention of adult antisocial behaviour* (pp. 130–204). Cambridge, UK: Cambridge University Press.
- Malti, T. (2016). Toward an integrated clinical-developmental model of guilt. *Developmental Review*, 39, 16–36. doi:10.1016/j.dr.2015.11.001
- Malti, T., Chaparro, M. P., Zuffianò, A., & Colasante, T. (2016). School-based interventions to promote empathy in children and adolescents: A developmental analysis. *Journal of Clinical Child and Adolescent Psychology*.
- Malti, T., & Noam, G. G. (2009). A developmental approach to the prevention of adolescents' aggressive behavior and the promotion of resilience. *European Journal of Developmental Science*, 3, 235–246. doi:10.3233/DEV-2009-3303
- Malti, T., Zuffianò, A., & Noam, G. G. (in press). Knowing every child's social-emotional development: Toward the use of developmental assessments in mental health interventions. *Prevention Science*.
- Masten, A. S. (2009). Ordinary magic: Lessons from research on resilience in human development. *Education Canada*, 49(3), 28–32.
- Metz, A., & Bartley, L. (2012). Active implementation frameworks for program success: How to use implementation science to improve outcomes for children. *Zero to Three Journal*, 32(4), 11–18.
- Meyers, D. C., Durlak, J. A., & Wandersman, A. (2012). The quality implementation framework: A synthesis of critical steps in the implementation process. *American Journal of Community Psychology*, 50, 462–480. doi:10.1007/s10464-012-9522-x
- Milat, A. J., King, L., Bauman, A. E., & Redman, S. (2013). The concept of scalability: Increasing the scale and potential adoption of health

- promotion interventions into policy and practice. *Health Promotion International*, 28(3), 285–298. doi:10.1093/heapro/dar097
- Ng, M. Y., Eckshtain, D., & Weisz, J. R. (2016). Assessing fit between real-life coping and evidence-based psychotherapies for youth depression in early adolescence. *Journal of Clinical Child and Adolescent Psychology*.
- Okamoto, S. K., Kulis, S., Marsiglia, F. F., Holleran Steiker, L. K., & Dustman, P. (2014). A continuum of approaches toward developing culturally focused prevention interventions: From adaptation to grounding. *The Journal of Primary Prevention*, 35(2), 103–112. doi:10.1007/s10935-013-0334-z
- Panzano, P. C., Sweeney, H. A., Seffrin, B., Massatti, R., & Knudsen, K. J. (2012). The assimilation of evidence-based health care innovations: A management-based perspective. *The Journal of Behavioral Health Services & Research*, 39(4), 397–416. doi:10.1007/s11414-012-9294-y
- Patel, V., Flisher, A. J., Hetrick, S., & McGorry, P. (2007). Mental health of young people: a global public-health challenge. *Lancet*, 14(369), 1302–1313.
- Payne, A. A., & Eckert, R. (2010). The relative importance of provider, program, school and community predictors of the implementation quality of school-based prevention programs. *Prevention Science*, 11, 126–141. doi:10.1007/s11121-009-0157-6
- Peurach, D. J., & Glazer, J. L. (2012). Reconsidering replication: New perspectives on large-scale school improvement. *Journal of Educational Change*, 13(2), 155–190. doi:10.1007/s10833-011-9177-7
- Pollak, S. D. (2015). Developmental psychopathology: Recent advances and future challenges. *World Psychiatry*, 14(3), 262–269. doi:10.1002/wps.20237
- Resnicow, K., Soler, R., Braithwaite, R. L., Ahluwalia, J. S., & Butler, J. (2000). Cultural sensitivity in substance use prevention. *Journal of Community Psychology*, 28(3), 271–290. doi:10.1002/(SICI)1520-6629(200005)28:3<271::AID-JCOP4>3.0.CO;2-I
- Rhoades Cooper, B., Bumbarger, B. K., & Moore, J. E. (2013). Sustaining evidence-based prevention programs: Correlates in a large-scale dissemination initiative. *Prevention Science*. Advance online publication. doi:10.1007/s11121-013-0427-1
- Rohrbach, L. A., Grana, R., Sussman, S., & Valente, T. W. (2006). Type II translation: Transporting prevention interventions from research to real-world settings. *Evaluation & the Health Professions*, 29(3), 302–333. doi:10.1177/0163278706290408
- Rotheram-Borus, M. J., Swendeman, D., & Becker, K. D. (2014). Adapting evidence-based interventions using a common theory, practices, and principles. *Journal of Clinical Child and Adolescent Psychology*, 43(2), 229–243. doi:10.1080/15374416.2013.836453
- Santucci, L., Thomassin, K., Petrovic, L., & Weisz, J. R. (2015). Building evidence-based interventions for the youth, providers, and contexts of real-world mental-health care. *Child Development Perspectives*, 9, 67–73. doi:10.1111/cdep.12118
- Solomontos-Kountori, O., Gradinger, P., Yanagida, T., & Strohmeier, D. (2016). The implementation and evaluation of the ViSC program in Cyprus: challenges of cross-national dissemination and evaluation results. *European Journal of Developmental Psychology*. Early online publication, February 22, 2016. <http://dx.doi.org/10.1080/17405629.2015.1136618>
- Southam-Gerow, M. A., & Kendall, P. C. (2002). Emotion regulation and understanding: Implications for child psychopathology and therapy. *Clinical Psychology Review*, 22(2), 189–222. doi:10.1016/S0272-7358(01)00087-3
- Spoth, R., Rohrbach, L. A., Greenberg, M., Leaf, P., Brown, C. H., & Fagan, A., ... Society for Prevention Research Type 2 Translational Task Force Members and Contributing Authors. (2013). Addressing core challenges for the next generation of type 2 translation research and systems: The Translation Science to Population Impact (TSci Impact) framework. *Prevention Science*, 14(4), 319–351.
- Stirman, S. W., Miller, C. J., Toder, K., & Calloway, A. (2013). Development of a framework and coding system for modifications and adaptations of evidence-based interventions. *Implementation Science*, 8(1). doi:10.1186/1748-5908-8-65
- Sundell, K., Beelmann, A., Hasson, H., & von Thiele Schwartz, U. (2016). Novel programs, international adoptions, or contextual adaptations? Meta-analytical results from German and Swedish intervention research. *Journal of Clinical Child and Adolescent Psychology*.
- Sundell, K., Ferrer-Wreder, L., & Fraser, M. W. (2014). Going global: A model for evaluating empirically supported family-based interventions in new contexts. *Evaluation & the Health Professions*, 37(2), 203–230. doi:10.1177/0163278712469813
- Supplee, L., & Metz, A. (2015). Opportunities and challenges in evidence-based social policy. *Social Policy Report*, 28(4), 3–16.
- Weist, M. D., Youngstrom, E. A., Stephan, S., Never, N., Fowler, J., Taylor, L., ... Hoagwood, K. (2014). Challenges and ideas from a research program on high-quality, evidence-based practice in school mental health. *Journal of Clinical Child and Adolescent Psychology*, 43(2), 244–255. doi:10.1080/15374416.2013.833097
- Weisz, J. R., Chorpita, B. F., Palinkas, L. A., Schoenwald, S. K., Miranda, J., & Bearman, S. K., ... The Research Network on Youth Mental Health. (2012). Testing standard and modular designs for psychotherapy with youth depression, anxiety, and conduct problems: A randomized effectiveness trial. *Archives of General Psychiatry*, 69, 274–282. doi:10.1001/archgenpsychiatry.2011.147
- Weisz, J. R., Krumholz, L. S., Santucci, L., Thomassin, K., & Ng, M. (2015). Shrinking the gap between research and practice: Tailoring and testing youth psychotherapies in clinical care contexts. *Annual Review of Clinical Psychology*, 11, 139–163. doi:10.1146/annurev-clinpsy-032814-112820
- Weisz, J. R., Ugueto, A. M., Cheron, D. M., & Herren, J. (2013). Evidence-based youth psychotherapy in the mental health ecosystem. *Journal of Clinical Child and Adolescent Psychology*, 42(2), 274–286. doi:10.1080/15374416.2013.764824
- Wolpert, M., Humphrey, N., Belsky, J., & Deighton, J. (2013). Embedding mental health support in schools: Learning from the Targeted Mental Health in Schools (TaMHS) national evaluation. *Emotional and Behavioural Difficulties*, 18(3), 270–283. doi:10.1080/13632752.2013.819253