Toward Dynamic Adaptation of Psychological Interventions for Child and Adolescent

Development and Mental Health

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Abstract

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 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.

Keywords: child and youth mental health; social-emotional development; dynamic adaptation; developmental intervention; translational research.

Toward Dynamic Adaptation of Psychological Interventions for Child and Adolescent

Development and Mental Health

The discourse on healthy development of children and adolescents has stimulated much discussion among scientists, practitioners, and policy makers 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 of development, and their underlying neural systems (see Pollack, 2015) allowing for increasingly systematic 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, 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 communities and society at large. Nevertheless, many questions remain unanswered. Most prominently, we are still far from understanding if our intervention activities are "good enough" for broad roll-out, and whether there are core features and components of interventions that should transcend proprietary programs that do not seem to differ greatly.

Based on the papers 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 evidence-based practices. The goal is to stimulate a discussion about how to better translate research into practice for successful and wide-scale implementation of evidence-based programs/techniques and contribute to new,

innovative intervention research. The ideas presented here are meant to contribute to reflection upon the questions of (1) what are effective practices in developmentally informed mental health intervention research with children and adolescents? (2) 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. What results constitute a "good-enough-status" of intervention for administration to different populations, as well as to children's and adolescents' developmental needs and contextual specificities. For example, Garber and colleagues (this Special Issue) explore the effectiveness and dissemination of current depression prevention programs for youth. While several of these programs have demonstrated efficacy under pristine conditions, few if any have shown convincing effectiveness under real-world conditions. Thus, widespread dissemination in this area seems not (yet) possible, even though there are positive results under laboratory conditions.

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 (this Special Issue) 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 of treatment implementation or within small scale pilot studies are 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 on 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 involves a 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). We define "dynamic adaptation" of mental health intervention approaches as 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 is needed (for examples of initiatives to build collaborative systems and improve performance and effective large-scale dissemination, see Chorpita & Daleiden, 2014).

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 the settings

diverse populations live in. 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).

Against this backdrop, what are the problems with evidence? We will 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. The third is how one can move from single

evidence-based programs to effective systems in order to address mental health, learning, and

development of all children. We will discuss these questions based on the perspectives that we

assembled in this special issue as well as other relevant literature, which is by no means intended

to be an exhaustive review. Rather, we will discuss selected studies to illustrate central

arguments and identify current strengths and challenges in this area of research.

Are Interventions Universally Good for All Children and Adolescents, or Do We Need

Developmental Differentiations?

There is a growing consensus among developmental psychologists and intervention

researchers that developmental research should guide the design and planning of interventions.

For example, Beelmann (2011) called for including empirical results on risk and protective

factors at different ages when formulating the program theory and intervention design. However,

many existing prevention and intervention programs and approaches are still not sensitive to the

developmental needs of children or adolescents, nor the variability of developmental needs

within and across school grades. For example, Malti, Chaparro, Zuffianò, and Colasante's meta-

analytic review (this Special Issue) 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, research and practical strategies on how to adapt intervention programs to developmental differences is one of the top priorities for future research. And while 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 (Malti & Noam, in press). 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 developmental changes and interindividual differences matter for designing interventions. Practically, this calls for assessment of 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., this Special Issue). 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 evidence suggesting that some strategies are more effective with certain children and families than others (see Belsky & van IJzendoorn, 2015). One of the reasons for this is that children may have significant developmental differences at baseline. For example, while 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 (this Special Issue). 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 youth's perspective 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 at different ages on intervention effects. For example, the effects of risk

factors on developmental differences in physiological, neurobiological, and emotion systems, as

well as related mental health outcomes, are largely non-specific. This is, in part, due to the fact

that 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, such as good emotion regulation skills, with the

presence of parental alcoholism can serve as a protective factor and explain why some children

adapt positively despite the parental alcoholism, a very serious risk factor.

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 et al., this

Special Issue; Malti et al., this Special Issue). 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., this Special Issue).

The second developmental differentiation issue is that relatively little is known about how timing matters. Timing here is defined as 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-emotional development) can provide insight into windows of opportunities (Masten, 2009) or particularly suitable periods that should affect the selection of intervention targets (e.g., parents, peers, children), content (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, while 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

Current interventions are not sufficiently sensitive in terms of the context and culture. It is highly questionable that the same programs, techniques, and strategies are equally effective and appropriate across contexts. Rather, parental cultural beliefs, 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?

Research indicates that culturally and contextually sensitive intervention, as well as an awareness of diversity are 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 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. And, 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 need not

only 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 Castro, Barrera, & Holleran

Steiker, 2010; Beidas & Kendall, 2014).

      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 change (adaptation). Specifically, Gardner and colleagues

(this Special Issue) investigated the transportability of parenting interventions for

reducing child behaviour problems. The authors found trials of 4 interventions,

originating in the USA or Australia, tested in 10 countries in 5 regions. They found that

interventions transported to Western countries showed comparable effect sizes to trials in

the original countries. Interestingly, effects were higher when interventions were

transported to countries that were culturally different in service provision than those in

which they were developed. This 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 (this Special Issue) 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 group of studies, whereas adapted and novel programs

both were slightly more effective than adopted programs in a Swedish group 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 versus 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 (1) methodological differences between evaluation studies conducted in different contexts, (2) ambiguities in the contextual adaptation process (e.g., differences in how adaptations were done), (3) the implementation quality of a national/regional replication of an intervention, and finally (4) real contextual influences (e.g., type of social care system where the intervention was implemented) that affect the outcomes of a transported intervention. However, due to the fact that 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 socio-ecological anti-bullying 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 (Strohmeier

et al., in press). Using a quasi-experimental longitudinal design with more than 1700 7th and 8th graders, the findings revealed that only minor adaptations were necessary in order to respond to educational and cultural particularities in Cyprus. The authors conclude 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 Roll-Out

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, Chero, & 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 judgements 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 which must be monitored carefully. For example, until relatively recently, the "treatment of choice" after a suicide in a school was to discuss the suicide school-wide. Clusters of suicide and the contagion effect had not yet been researched sufficiently to change this practice. In addition, after trauma, the idea was to discuss it so as to avoid "sealing over" and increasing the chances of post-traumatic stress. We now

know these were bad ideas. Similarly, intervention group programs for delinquent youth often turn into a training ground for new delinquent strategies for group members 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 examples above; however, medicine ultimately aspires to implement a pro-active system of proof, not a system of change, as used on negative consequence in the field. 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 until recently in educational curricula. 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 array of services. 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 educational environments 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, in a typical school, a leadership team must deal with the district's (or other local or governmental agency's) choice of educational programs. Increasingly,

requirements include programs regarding school safety, anti-violence, positive school

climate, systematic behavior management, positive relationship improvement, anti-

bullying, anti-suicide, anti-drop-out, anti-pregnancy, anti-drug and alcohol, pro-social 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, a school 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 need to be assured. This example illustrates that while we are

debating the quality and dissemination of intervention programs and strategies, the

typical institutional settings in which they are administered require support in decision-

making and implementation processes.

One important question to be addressed is what system of support, collaboration,

and organization should be established so that schools (and related service providers) can

chose and implement evidence-based practices for children in a cohesive system, rather

than program by program. And if one program (e.g., anti-bullying) already requires all of

the above mentioned steps and supports, how can a school or district address all the other

mental health dimensions, such as depression, ADHD, conflict problems, etc.? These

problems have prevention programs, too. Cohesiveness also calls for need assessments

which can help monitor the implementation and success of intervention approaches. In

line with this argument, researchers have urged the systematic use of screening and

assessment tools to measure psychopathology and developmental functioning in all

children (Costello, this Special Issue; Durlak, Weissberg, Dymnicki, Taylor, &

Schellinger, 2011; Malti et al., in press). But can specific interventions be connected to

other interventions so that they can be administered to all students? In the case of anti-

bullying interventions, can empathy-enhancing strategies become a focal point that not

only reduces bullying but also delinquency, violence and school behavior problems? In

other words, one would have to build modules that schools can chose from, with certain

underlying principles. Secondly, 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, this Special Issue). 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 (this Special Issue) 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, Ghate (this Special Issue) 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 non-

linear 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,

importantly, 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., this Special Issue). 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, etc. (Collins, Patel et al., 2011; see

Costello, Malti et al., and Ng et al., this Special Issue; Malti, Zuffiano, & Noam, in press; 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 discuss 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.

Lastly, 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 that it rather 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, this Special Issue;

Rohrbach, Grana, Sussman, & Valente, 2006). At the same time, systems that can scale-up

preventive interventions have been worked out in principle (see Collins, Patel et al., 2011;

Costello, this Special Issue). 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, etc., 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, is 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. While 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 healthcare, including the training of the primary

care provider in mental health skills (Kolko & Perrion, 2014). The training of practitioners in

school settings is another promising strategy to high-quality dissemination (Rotheram-Borus,

Swendeman, & Becker, 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 requires not only 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 policy makers. 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). Lastly, there is a need to develop and

disseminate guidelines for decision-making under uncertainty (i.e., what is disseminated, when

and why). The seemingly simple question of what kind of external validity is considered good

enough for wide dissemination remains unanswered. We live in a time when researchers very

often focus on marketing "their" programs even globally rather than contributing to more robust

evidence, (i.e., by making their data available for secondary analysis or replication). 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.

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*(32).

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 Publishing.

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: 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

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., V. Patel, et al. (2011). Grand challenges in global mental health. *Nature, 475*(7354), 27-30. doi:10.1038/475027a

Costello, J. (this special issue). 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 group and problem behavior. *American Psychologist, 54,* 755-764. doi: 10.1037/0003-066X.54.9.755

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-

analysis of school-based universal interventions. *Child Development, 82*(1), 405-432. doi: 10.1111/j.1467-8624.2010.01564.x

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. *Social Work Practice, 25*(4), 510-522. doi:10.1177/1049731514544327

Garber, J., & Brunwasser, S. (this special issue). 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. (this special issue). Parenting interventions going global: A systematic review. *Journal of Clinical Child and Adolescent Psychology.*

Ghate, D. (this special issue). 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, Jr., S. J., & 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

Kendziora, K., Osher, D., & Weissberg, R. (this special issue). 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., & Sheetal, K. (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: Psychology Press.

Little, M. (2010). *Improving children's outcomes depends on systemising evidence-*

　　　based practice. London: 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: 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. (this special issue). 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. (in press). Social-emotional development: From theory to practice.

  European Journal of Developmental 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. (under revision). Knowing every child's social-

  emotional development: Toward the use of developmental assessments in

  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. (2012). 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. (this special issue). 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. *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. *Journal of Behavioral Health Services & Research, 39*(4), 397-416.

      doi:10.1007/s11414-012-9294-y

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. *Word 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 Profession, 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 youths, providers, and contexts of real-world care.

Child Development Perspectives, 9, 67-73. doi: 10.1111/cdep.12118

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*(65). doi:10.1186/1748-5908-8-65

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.

doi:10.1007/s11121-012-0362-6

Strohmeier, D., et al. (in press). The implementation and evaluation of the ViSC program

in Cyprus: Challenges of cross-national dissemination and evaluation results.

European Journal of Developmental Psychology.

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.

Sundell, K., Beelmann, A., Hasson, H., & von Thiele Schwartz, U. (this special issue).

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).

Weist, M. D., Youngstrom, E.A., Stephan, S., Never, N., Fowler J., Taylor, L., McDaniel,

H., Chappelle, L., Paggeot, S., & 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:10.108/15374416.2013.764824

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