Enabling Improvements: Combining Intervention and Implementation Research

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Abstract

Transferring evidence-based intervention programs effectively into practice and into the wider field of public policy often fails, even if the logic of evidence-based approaches has become highly important in recent years. As a consequence, the field of implementation research has emerged, implementation frameworks have been developed, and implementation studies have been conducted. However, even if intervention research and implementation research have both achieved mentionable progress in the past, they are rather unrelated, and different traditions and research groups are involved. This might be one of the key reasons why there are still many problems in transferring evidence-based programs into widespread community. In order to enable improvement in this field, in this essay, we argue for a systematic integration of intervention and implementation research as a promising emerging approach. Therefore, we recommend a six-step procedure requiring researchers to design and develop intervention programs using a field-oriented and participative approach from the beginning on. In particular, the perspective of policymakers has to be included as well as the wider context of values, rewarding systems, and basic attitudes in science.

INTRODUCTION

With regard to an enormous amount of unsolved problems and demands of the practice—not least in social contexts—a transfer of existing knowledge and evidence from science into practice is a prominent issue. Typical areas providing know-how that could rather directly contribute to an optimization of the practice are, for example, the educational context and the field of health. However, transferring scientific evidence and respective intervention programs sustainably into practice and into the wider field of public policy seems difficult and often does not work. As a consequence, a new field of research has emerged: implementation science. Within this field of research, implementation frameworks have been developed (Meyers,

Durlak, & Wandersmann, 2012) and numerous implementation studies have been conducted, showing for example that an active, accompanied, long-term, and multilevel implementation approach is much more effective than traditional forms of dissemination (Ogden & Fixsen, 2014). However, there are still many challenges in the field of transferring evidence-based programs into widespread community practice.

There are various reasons for these problems that could and should be taken into account, but one very important structural constraint seems to be rather obvious: So far, intervention research and implementation research are not systematically connected and many different traditions and research groups are involved. Implementation research is often mandated and financed by parties that do not belong to the scientific community and therefore remains rather isolated. Sometimes, it is even considered to be less scientifically valuable than research that develops new interventions (Fixsen, Blase, & van Dyke, 2011). This lack of anchoring of this new discipline might be one of the key reasons why the efforts of implementation science are not sufficiently effective so far. On the basis of this assumption, we argue for a systematic integration of intervention and implementation research. To realize this, we propose a six-step procedure that requires researchers to design and develop intervention programs based on a field-oriented and participative approach from the very beginning on. This means that the successful transfer of evidence into practice—and especially of evidence-based intervention programs into public policy—should become more likely, if we leave the perspective of transferring a program to practitioners just at the end of the research process. We propose to systematically consider the needs of the field within the whole conceptualization of an intervention as well as during its evaluation and implementation. In this essay, we present the baselines of such an approach and discuss its demands as a promising trend in science (see also Spiel, Schober, & Strohmeier, 2016).

PROGRESS AND LIMITATIONS OF EVIDENCE-BASED INTERVENTIONS AND IMPLEMENTATION RESEARCH IN THE PAST DECADES

In the past decades, the evidence-based movement has significantly gained impact. Especially, in Anglo-American contexts, a lot of effort was put into making better use of research-based programs in human service areas such as medicine, child welfare, and health (Fixsen, Blase, Naoom, & Wallace, 2009; Spiel, 2009). A reason for this trend toward evidence-based measures might be the massive increase in social challenges that results in the need for proven measures to cope with them. In turn, this lack of evidence-based measures in

this field points out the necessity of transferring relevant existing scientific knowledge and evidence into practice.

One part of the growing evidence-based movement so far was to ensure good standards of evidence, which is obviously an important prerequisite for bringing prevention or intervention programs in the field. For example, the Society for Prevention Research has provided standards to assist practitioners, policymakers, and administrators in determining which interventions are efficacious, which are effective, and which are ready for dissemination (for details, see Flay *et al.*, 2005). The common ground of these standards is the fact that evidence-based programs are defined by the research methodology used to evaluate them, and the definition of randomized trials as the gold standard for evidence-based measures (Fixsen *et al.*, 2009).

However, standards alone cannot ensure a transfer of evidence into practice; they are just one aspect of a complex process. Therefore, by focusing on developing and differentiating criteria, the evidence-based practice movement so far has not provided the intended benefits—at least not to its presumably possible extent. Implementation and transfer of scientific knowledge into practice and in the wider range of public policy has often even failed (Fixsen *et al.*, 2009). One important factor was that although program evaluation became a more and more obligatory part in a many initiatives, it was often lacking a specific and explicit study and enhancement of the implementation processes. This was acknowledged as fundamental deficit, based on the insight that an active, long-term, multilevel implementation approach is far more effective than passive forms of dissemination (Ogden & Fixsen, 2014).

As a consequence, the field of implementation research has emerged (Rossi & Wright, 1984). Fixsen, Naoom, Blase, Friedman, and Wallace (2005, p. 5) defined implementation as the "specific set of activities designed to put into practice an activity or program of known dimensions." Consequently, implementation science has been defined as "the scientific study of methods to promote the systemic uptake of research findings and evidence-based practices into professional practice and public policy" (Forman *et al.*, 2013, p. 80).

Implementation science has grown impressively within the last years, several theoretical models and frameworks have been published and numerous studies have been conducted. However, despite all these efforts within the field of implementation science, there is an understanding among researchers that the empirical support for evidence-based implementation is insufficient so far (Ogden & Fixsen, 2014). Although there is a large body of empirical evidence concerning the importance of implementation and growing knowledge of the contextual factors that can influence implementation, knowledge of how to systematically increase the likelihood of high-quality implementation is still unsatisfactory (for a review, see e.g., Meyers *et al.*, 2012).

What are the reasons for this lack of success for this very promising approach? On the one hand, implementation science is a very young field of research. It exists since only some decades with a rather new focus on complex questions of interventions and evaluations and beyond. However, even if things just need more time to come to action and to bring visible effects, one impeding and very basic structural deficit or obstacle can be identified: intervention research and implementation research are rather separated and joint activities are rare (see e.g., Forman *et al.*, 2013). Scientific intervention research and the connected activities often refer to the theory-driven development and provision of a prevention or intervention program for clients. Mostly voluntarily, highly motivated people or institutions (e.g., schools) realize the program within a clearly defined period of time. Such programs are often evaluated within a standard evaluation design (e.g., the comparison of different measurement groups, pre-post-follow-up designs, focusing on different levels of effect). The evaluation focuses on questions such as the following: Does the program work within optimal conditions? Why does it work? Do the effects persist in the long run? Often, the work of the respective research projects is considered to be done after investigating these questions.

On the other hand, implementation research activity often starts just then and works with already existing programs. It refers to actions taken within the organizational setting to ensure that the intervention delivered to clients is complete and appropriate—as only then the assumed effects can be assured. Therefore, the focus is on the specific conditions of the field, in which a measure is conducted and on the needs and competences of all stakeholders involved. Typical issues can be as follows: How to ensure the readiness of an organization for the implementation of a program, for example, in the sense of (sufficient) staff capacity? How is it possible to provide the staff with the required competences effectively? Why do proven programs sometimes exhibit unintended effects when realized in a specific setting?

Often, different research groups with different research traditions are involved in these two tasks. Beyond, different funding structures and a different status in science can be identified: intervention researchers are often specialists in certain fields of health or education, funding their research within classic scientific structures. Presently, implementation researchers are mostly given mandates by politicians to take on the implementation of already existing interventions. Furthermore, implementation research is very difficult realize within the constraints of university research environments (e.g., owing to time or financial constraints) and is sometimes even considered to be less scientifically valuable (Fixsen *et al.*, 2011).

This presently prevailing separation of intervention and implementation research leads to gaps within a coherent improvement process and might

be the reason for diverse barriers for a successful transfer of scientific knowledge to practice. Consequently, we suggest a systematic integration of the two approaches. Researchers should systematically design and develop intervention programs using a fundamentally field-oriented and participative approach [according to the concept of use-inspired basic research by Stokes (1997)]. This means that the specific needs of the field and the involved stakeholders should not only be considered in the process of implementation, transfer or scaling up, but also as part of the whole conceptualization and evaluation of an intervention (Spiel, Schober, Strohmeier, & Finsterwald, 2011). Consequently, an intervention, its evaluation, and implementation should be developed in an integrative way. In order to realize this and to avoid as much presumable risks as possible, the perspective of stakeholders on all relevant levels should be included. Especially, in fields such as education or health, the perspective of policymakers has to be integrated explicitly and analyses of supporting or hindering factors of evidence-based policy need to be included (Davies, 2012; Spiel *et al.*, 2011). Unquestionably, several researchers would argue that they already work with these ideas in mind, but a systematic approach is missing so far. On the basis of this diagnosis, we propose an approach for the systematic integration of intervention and implementation research in the following section.

A FRAMEWORK FOR AN INTEGRATION OF INTERVENTION AND IMPLEMENTATION RESEARCH—SOME CORNERSTONES OF A NEW APPROACH

Combining theoretical and empirical knowledge from prior research (Glasgow, Vogt, & Boles, 1999; Greenhalgh, Robert, MacFarlane, Bate, & Kyriakidou, 2004) with the arguments and desiderates described earlier, we consider at least six deliberate parameters as constitutive components of an integrative framework of intervention and implementation research (Figure 1). These parameters can be considered as steps, as they mostly will occur in succession and at least partly build upon each other, even if some of them can and might be performed simultaneously. The six steps, respectively, parameters together must be considered as parts of a dynamic process with many subprocesses, feedback loops, and interdependencies (Spiel *et al.*, 2016).

1. *Identifying Desiderates for Research with a Focus on Social Responsibility*. In the case of an integrative approach to intervention/prevention and implementation research, the basic step is to consciously pay attention to relevant research topics in this context. Consequently, within this approach, researchers working on topics relevant for interventions and
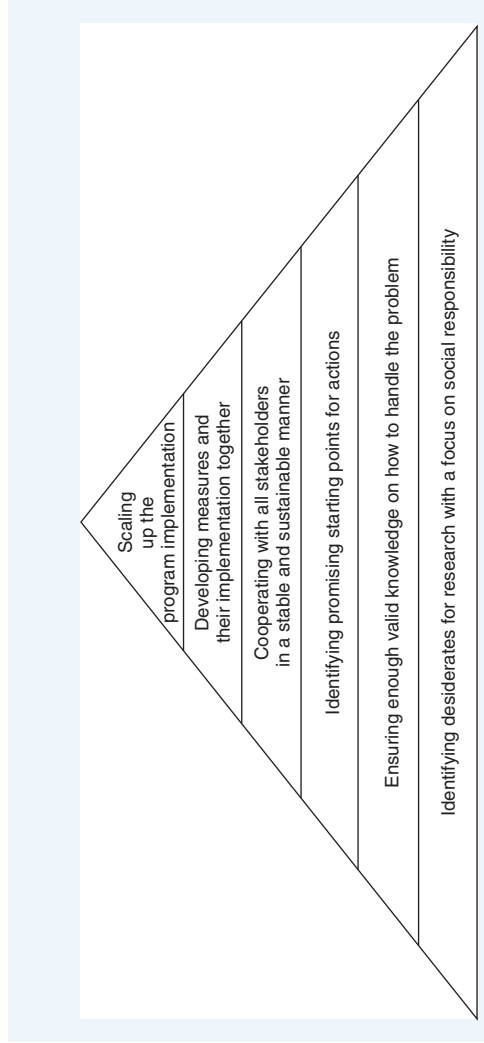
Figure 1 Constitutive components of an integrative framework of intervention and implementation research.

for changes in practice should not primarily focus on research desiderates and problems arising from basic research but also on (especially social) problems in society. This needs the basic attitude of being a mission-driven researcher, in addition to following a curiosity-driven approach that is widespread and highly respected in the scientific community. Therefore, we have to deliberately extend our focus in the process of identification of valuable research topics and combine quests for fundamental understanding with a consideration of practical use (Stokes, 1997). In other words, if scientists intend to contribute to this field of research, the first step requires sociopolitical responsibility as a basic mind-set.

2. *Ensuring Enough Valid Knowledge on How to Handle the Problem*. A second decisive prerequisite for any kind of transfer is the availability of robust and sound scientific knowledge (Spiel, Lösel, & Wittmann, 2009). Reliable research of high scientific quality is needed—with regard to theory and evidence. Effective interventions and evidence-based actions in general must be based on enough reliable insights into, for example, causal mechanisms and connections. This by no means is an easy demand, especially if we have a look at fields such as education or health. Just a quick glance on topics such as, for example, students' motivation in school and how to enhance it leads to a wide body of literature with some central and undoubted insights, but also to still many open questions. Consequently, researchers working at the interface between intervention and implementation have to be experts in their fields with excellent knowledge of theory, methods, empirical findings, and limitations.

3. *Identifying Promising Starting Points for Actions*. The identification of a desiderate or problem and the availability of relevant insights for initiating changes are still not enough if one does not succeed in identifying concrete and promising starting points for interventions and their implementation with regard to the prevailing conditions and system characteristics. This must be emphasized, as a wide body of research has made clear that many intervention programs and measures do not work in any case and not at all times (Meyers *et al.*, 2012). Here again, a necessary condition is high expertise in the relevant scientific field. However, this must be combined with a differentiated view on prevailing cultural and political conditions. Therefore, researchers who want to successfully integrate intervention and implementation research need knowledge and experience in the relevant practical field and its contextual conditions—including knowledge about potential problems and limitations.

4. *Cooperating with all Stakeholders in a Stable and Sustainable Manner*. In order to conduct integrative intervention and implementation research, stable alliances with all stakeholders and especially with the relevant policymakers are necessary. However, such connections and working structures are traditionally not established between science, practice, and politics. Research mostly follows its own, very intrinsic logic, which often clearly differs from necessities of the practice and from political thinking. Therefore, a very deliberate process of establishing cooperation and building alliances is necessary. Among other things, this includes more awareness of policymakers' scope of action. Researchers in this field have to consider that there are decisive influences on government and policy, beyond evidence. These include values, beliefs, and ideology, which are the driving forces of many political processes. Researchers have to keep in mind that policymaking is highly embedded in a bureaucratic culture and is forced to respond quickly to everyday contingencies and to often very limited resources (Davies, 2012). Consequently, researchers have to find ways to integrate the relevance of evidence within the context of all these influencing factors. However, this step surely sometimes is burdensome and an unfamiliar demand for many researchers. However, it is a crucial one and again addresses a certain basic attitude of researchers: it requires that researchers make their voice heard.

5. *Developing Measures and Their Implementation Together*. On the basis of the four above-described steps, which in fact build the prerequisites for this fifth one, a coordinated development and implementation of evidence-based measures can be performed in a theory-driven, ecological, collaborative, and participatory way. This means that researchers, who want to realize an integrative intervention and implementation research, have to include the perspectives of all relevant stakeholders (practitioners, policymakers, government officials, public servants, and communities) in this development process, communicate in the language of these diverse stakeholders and meet them as equals. Therefore, researchers again have to consider parameters for their research work that differs from many traditional approaches: working together right from the beginning is not common in many fields and also requires new conceptions of, for example, research planning (regarding things such as the duration of project phases; see Meyers *et al.*, 2012). Here, one big challenge surely is to find a balance between considering manifold needs and realize a wide participation but also maintain scientific criteria and standards of evidence. Consequently, researchers must have theoretical knowledge and practical experience in their very specific field of expertise, but the required profile for a

successful "integrative intervention and implementation researcher" obviously is much wider.

6. *Scaling up the Program Implementation*. The final scaling up step is a classic topic of implementation research as we know it so far. Several fruitful models and guidelines have been proposed here, such as Meyers *et al*. (2012) made evident in their review consisting of 25 frameworks. They found 14 central dimensions within these frameworks and grouped them into thematic areas: (i) assessment strategies, (ii) decisions about adaptation, (iii) capacity-building strategies, (iv) creating a structure for implementation, (v) ongoing implementation support strategies, and (vi) improving future applications. According to their synthesis, the implementation process consists of a temporal series of these interrelated steps, which are critical to quality implementation (see also Spiel *et al*., 2016).

However, different to prior concepts, in our integrative approach, the necessities and stakeholders for a scaling up are claimed to be taken into account from beginning on.

CONCLUSIONS AND FUTURE PERSPECTIVES FOR COMBINING INTERVENTION AND IMPLEMENTATION RESEARCH

In this essay, we propose the systematic integration of intervention and implementation research as a promising and necessary trend for future research. From our perspective, such an integration has the potential to enable large-scale improvements as it supports the direct transfer of scientific knowledge to practice. However, why is this a new approach, as on the surface, the steps seem self-evident? Furthermore, what are the special demands for enabling future improvement based on such an approach?

Regarding the first question, one must say that obviously, most, if not all components (both within and across the six steps), are already known and have been considered in intervention and implementation research. However, the new and demanding challenge is our postulation of bringing them together in an integrative and coordinated way, in order to achieve success. The abovedescribed approach represents a very basic but also a very systematic research concept, which is more than purely the sum of its steps—ignoring one aspect changes the whole dynamic. In addition, the sound, consistent integration of intervention and implementation research as described earlier also requires a (re)differentiation of our scientific identity and the creation of a new, wider job description for researchers in this field.

The conceptual necessity of a basic integration directly leads to the second question about the future demands. As it became evident above, combining

intervention and implementation research is very demanding. Therefore, the appropriate acknowledgement in the scientific community is essential. Science must change its very established "provision logic" and consequently, individual researchers cannot be the only ones engaging in this kind of research. Universities also have to include it in their mission. We therefore strongly recommend a discussion of success criteria in academia (Fixsen *et al.*, 2011). The social responsibilities of academics and universities, respectively, have to be considered more deeply. The current gratification system in science is more oriented to basic than to applied research. Mission-driven research picking up problems in society presently is less financed and noticed. Consequently, the number of researchers engaged in this field is limited—even if in the last years some advances became obvious.

All in all, some systematic changes in concepts, attitudes, and valuing structures must be considered, and the stakeholders within the action triangle of science, practice, and policy must come to a culture of appreciation and professionalized communication. The positive starting point is that a lot of knowledge already exists. However, the success of effective intervention and implementation research in the following years will depend on how we succeed in bringing a joined engagement to take social responsibility for outcomes beyond pure scientific indices or short-term political success to action.

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