An Integrative Approach to Evidence Based Practices

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1. Introduction and overview

Evidence-based practices (EBPs) is an important standard in the evaluation of interventions that can be used to impact decision making (Kaiser & McIntyre, 2010). Throughout the article, evidence-based practices are defined as practices that are based on current best evidence and that are used as the basis for clinical, managerial, and policy decisions related to service delivery and continuous quality improvement. Current best evidence is information obtained from credible sources that used reliable and valid methods and/or information based on a clearly articulated and empirically supported theory or rationale (Schalock & Verdugo, 2012; Schalock, Verdugo, & Gomez, 2011).

In the previous two articles in this series (Schalock, Verdugo, & Gomez, 2011; van Loon et al., 2013) we presented the five component evidence based outcomes model shown in Figure 1. This model depicts the relationships among the practices in question and their intended effects, evidence indicators related to these intended effects, evidence gathering strategies, and interpretation guidelines. Since the initial publication of this model, there has been additional work and discussion regarding the model's components. The purpose of this article is to expand on our initial work and to integrate three current perspectives on EBPs.

<Figure 1>

2. Perspectives on EBPs

There are at least three different perspectives on evidence and EBPs: the empirical-analytical, the phenomenological-existential, and the post-structural (Broekaert, Autrique, Vanderplasschen, & Colpaert, 2010). These three perspectives relate to different approaches to evidence and the conceptualization, measurement, and application of EBPs. For example, the empirical-analytical perspective focuses on experimental evidence as the basis for EBPs (Blayney, Kalyuga, & Sweller, 2010; Brailsford & Williams, 2001; Cohen, Stavri, & Hersh, 2004). The phenomenological-existential perspective views intervention success as based on the reported experiences of well-being (Kinash & Hoffman, 2009; Mesibov & Shea, 2010; Parker, 2005). From a third, post-structural perspective, the evaluation of evidence is based on public policy principles such as inclusion, self-determination, participation, and empowerment (Broekaert, Van Hove, Bayliss, & D'Oosterlinck, 2004; Goldman & Azrin, 2003; Shogren & Turnbull, 2010).

From a holistic point of view, these three perspectives argue for an integrative approach to evidence-based practices, their application, and the standards and guidelines that should govern their use. This integrative approach results in the understanding of diverse approaches to EBPs and their conceptualization, respective measurement techniques, and evaluation standards. The integrative approach is summarized in Table 1.

<Table 1>

3. Evaluation standards

The three evaluation standards discussed in this section focus on evidence and its interpretation. Evidence, which is obtained through a process of empirical data collection, evaluates the hypothesis that a particular activity is either effective or ineffective. Based on advances in the field of measurement and the incorporation of the three perspectives discussed

above regarding EBPs, we propose that the interpretation of evidence should be based on three criteria: the quality of the evidence, the robustness of the evidence, and the relevance of the evidence.

3.1. The quality of the evidence

According to the three perspectives on EBPs as defined above and summarized in Table 1, quality of evidence is related to the conceptualisation of the term 'evidence'. From an empirical-analytical perspective, evidence should be derived from research, involving random controlled trials (RCTs), which historically have been considered the gold standard for decision making (Bouffard & Reid, 2012). As a consequence, research designs such as quasi-experimental designs, pre-post comparisons, correlational studies, and case histories are viewed as generating less evidence. Evaluation criteria from an empirical-analytical perspective are 'reliability', 'validity', 'generalizability' and 'objectivity' (Lincoln & Guba, 1985). From a phenomenological-existential point of view, evidence is part of action, which implies that 'the act of taking action' is more important than the outcome itself. The phenomenological nature of intervention strategies require qualitative research designs, in which professional opinions and client-centered factors are explored. In this regard, case studies, opinions of respected authorities or narratives are highly valued. Evaluation criteria from a phenomenological-existential perspective are 'credibility', 'transferability', 'dependability' and 'confirmability' (Lincoln & Guba, 1985). From a post-structural perspective evidence should focus on the enhancement of personal well-being and quality of life. Thus, quality of evidence is dependent on the way social practitioners enhance choices and rights of clients in the selection of interventions and supports.

3.2. The robustness of the evidence

In quantitative research the robustness of evidence refers to the magnitude of the observed effect (Soler, Trizio, Nickles & Wimsatt; 2012). This magnitude can be determined from: (a) probability statements (e.g. the probability that the results are due to chance is less than 1 time in 100, $p<.01$); (b) the percent of variance explained in the dependent variable by variation in the independent variable; and/or (c) the statistically derived effect size. As noted in Table 2, effect size is the generally recommended criterion used to evaluate the robustness of evidence when the type of research involves experimental, quasi-experimental, or single-case studies. The evaluation standards presented in Table 2 are based on the work of APA (2010), Carter and Little (2007), Cesario, Morin, & Santa-Donato (2002), Cohen and Crabtree (2008), Ferguson (2009), Franzblau (1958), and Shogren et al. (2010).

<Table 2>

When qualitative research methods are used, parallel standards can be employed. Table 3 provides a summary of study designs and levels of evidence regarding the robustness of qualitative research evidence. This summary is based on the work of Carter and Little (2007), Cesario et al. (2002), Daly et al. (2007), Given (2006), Lincoln and Guba (1985), and Nastasi & Schensul (2005).

<Table 3>

3.3. The relevance of the evidence

The relevance of evidence is related to purpose and use of practices. Specific evaluation standards for evaluating the relevance of evidence are just emerging. Although all three perspectives deal with the question of relevance of evidence, the post-structural paradigm integrates this criterion. The following standards regarding the relevance of

evidence are based on our reading of the evidence-based practices literature related to making clinical, managerial, and policy decisions.

3.3.1. For those making clinical decisions related to diagnosis, classification, and planning supports, relevant evidence is that which enhances the congruence between the specific task and the available evidence. Such congruence will facilitate more accurate diagnoses, the development of more functional and useful classification systems, and the provision of a system of supports based on the person's personal goals and assessed support needs (Schalock & Luckasson, 2014). From the service recipient's perspective, information regarding specific EBPs should also assist the person in making personal decisions that are consistent with his/her values and beliefs. Examples include decisions regarding informed consents, placement options, selection of service/support providers, and opinions regarding the intensity and duration of individualized supports (Schalock & Luckasson, 2014).

3.3.2. For those making managerial decisions, relevant evidence identifies those practices that enhance a program's effectiveness and efficiency. In general, these practices relate to implementing individualized support and quality improvement strategies that have been shown to significantly affect personal outcomes and organizational outputs (Schalock & Verdugo, 2012).

3.3.3. For those making policy decisions, relevant evidence is that which: (a) supports and enables organizations to be effective, efficient, and sustainable, (b) influences public attitudes toward people with disabilities, (c) enhances long-term outcomes for people with disabilities, (d) changes education and training strategies, and (e) encourages efficient resource allocation practices (Schalock et al., 2011).

As indicated in these standards, collecting evidence is only useful only after making the aim of the practice clear (Biesta, 2010). Evaluating the relevance of evidence needs to be

done within the context of the questions being asked, what is best for whom, and what is best for what (Brantlinger, Jimenez, Klingner, Pugach, & Richardson, 2005; Bouffard & Reid, 2012). According to Biesta (2010), value judgment comes first. Without normative evaluations, selected practices do not exist. Biesta describes two dimensions in value judgment: the question of general desirability of information about what might work, and an educational value judgment about the means one can use to try to achieve desirable outcomes. Furthermore, research is done in a specific context and among particular individuals (Brantlinger et al., 2005). Thus from a relevance perspective, practitioners will see similarities compared to their own situations and evaluate the relevance according to their own circumstances.

4. Implementation guidelines

The implementation of specific EBPs within an organization or system depends first on the selection of specific practices, and second on the application of the respective practice. Thus, our proposed set of Implementation Guidelines encompass selection criteria and application considerations. Both involve the translation of research into practice, the recognition of the unique characteristics of an organization or system, and the fact that the three perspectives focus on/or emphasize potentially different things (Biesta, 2010; Chamberlain et al., 2008; Cook & Schirmer, 2003; Mitchell, 2011; Pronovost et al., 2008; Schalock & Verdugo, 2012; Scott & McSherry, 2009; Cook, Tankersley & Landrum, 2009; Vaughn & Linan-Thompson, 2003; Wiseman-Hakes et al., 2010). A summary of these criteria and application considerations is presented in Table 4.

<Table 4>

4.1. Selection criteria

Four criteria establish a decision making process for selecting a specific evidence-based practice. First, is it consistent with the organization's mission and the desired outcomes of the practice? This criterion (described in the literature as value judgment) precedes the evaluation of evidence and therefore precedes the identification of a potential best practice. Second, is the practice described fully? This criterion stresses the importance in decision making of being systematic (i.e. organized, sequential, and logical), formal (i.e. explicit and reasoned), and transparent (i.e. apparent and communicated clearly). Third, has the effectiveness of the practice been demonstrated? This criterion relates to the quality and robustness standards discussed earlier and summarized in Tables 1 and 2. Fourth, is the practice applicable and relevant to the individuals involved? This criterion relates to the relevance of the evidence.

4.2. Application considerations

Organizations and systems are complex, with their complexity reflected in different purposes, cultures, capabilities, resources, and decision making styles. Consequently, the application of a selected EBP is not assured. Addressing the four application considerations discussed in the following paragraph has been shown to impact the successful translation of evidence into practice (Biesta, 2010; Mitchell, 2011; Pronovost et al., 2008; Scott & McSherry, 2009; Cook, Tankersley & Landrum, 2009; Wiseman-Hakes et al., 2010).

First, be sensitive to the organization or system's receptivity. Implementing EBPs is successful only within an organization or system that is receptive to change, has strong facilitator and leadership, provides appropriate resources to the change, and has a monitoring and evaluation system that provides feedback information. Second, EBPs should be consistent with a social-ecological perspective of disability/disorder that stresses the interaction of the person with his/her environment. Adopting this perspective allows for a broader range of

targets for intervention and encourages the design of interventions that are minimally intrusive. Third, the practice in question needs to be capable of being taught via consultation and learning teams but within the constraints of resources (time, money, expertise). A potentially useful model to implement new practices involves what Pronovost et al. (2008, p. 963) refer to as the 'four Es': engage (i.e. explain why the intervention or strategy is important); educate (i.e. share the evidence supporting the intervention), execute (i.e. design an intervention 'tool kit' targeted at barriers, standardization, independent checks, reminders, and learning from mistakes), and evaluate (i.e. regularly assess performance measures and unintended consequences). Fourth, successful application requires clearly stated outcomes that are targeted to concrete, observable behaviour or organization outputs that can be objectively measured over time.

5. Discussion

An integrative approach to the development and use of EBPs includes: (a) an EBP model such as that shown in Figure 1 and discussed more fully in Schalock et al. (2011); (b) individual, organization, and systems-level outcomes that are used as evidence in determining best practices (van Loon et al., 2013); (c) the measurement techniques associated with each of the three EBP perspectives; (d) the evaluation standards discussed previously and summarized in Table 1; and (e) the implementation guidelines discussed in this article.

There are a number of advantages to an integrate approach to EBPs. First, such an approach reflects a broader perspective of evidence and reflects the context of most human service programs: RCTs associated with the empirical analytical perspective do not entirely reflect professional standards and professional ethics (Schalock & Luckasson, 2014). Second, an integrative approach provides a framework for connecting EBPs to continuous quality improvement (CQI). In a recent article (Schalock et al., in press) we discuss the four

components of a CQI framework: ‘planning’ based on self-assessment, ‘doing’ based on EBPs, ‘evaluation’ based on personal and organizational outcomes, and ‘acting’ based on assessing the change/impact of the quality improvement strategies employed. A third advantage is to incorporate the three perspectives into an evidence based practices model. Based on the material presented in this article, we have therefore modified our original evidence based practices model (cf. figure 2). As shown in Figure 2, there is a logical and aligned sequence among the practices in question; the selection of relevant perspectives and respective methods; the selection of evidence indicators and the evidence gathering strategy employed; the guidelines used to interpret the quality, robustness and relevance of the evidence gathered; and specific implementation strategies.

<Figure 2>

6. Conclusion

Evaluation research consists of different types of questions and different methodologies. An integrative approach to evidence based practices is becoming increasingly important as the field continues to focus on evidence and best practices. In this regard there is a need to re-evaluate the feasibility of RCT as the only method for establishing an evidence-based practice. In light of the different perspectives on evidence, additional guidelines and standards are needed to evaluate evidence for effective practices (Bouffard & Reid, 2012). Alternative criteria on generalization, validity and acceptability of meaningful outcomes should be considered so that there is clarity about the match between research questions and methodology, a methodology that represents high quality, and the use of research findings as scientific evidence for effective practices. (Odom et al., 2005)

The measurement techniques, standards and guidelines proposed in this article are based on best practices within the areas of measurement and the interpretation of information. The guidelines are also based on the need to use specific selection criteria and be sensitive to specific application issues. Standards and guidelines should be responsive to the different perspectives, different application areas, and the need to use EBPs for clinical, managerial, and policy decisions in reference to the perspective of the customer and the organization's growth, financial analyses, and internal processes (Schalock et al., in press). The primary intent of the integrative EBPs model shown in Figure 2 and the standards and guidelines discussed in this article is to facilitate the alignment among research practices and the implementation of evidence-based practices so that organizations and systems develop policies and implement practices that result in valued outcomes for service recipients.

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Figure 1. Evidence-Based Practices Model

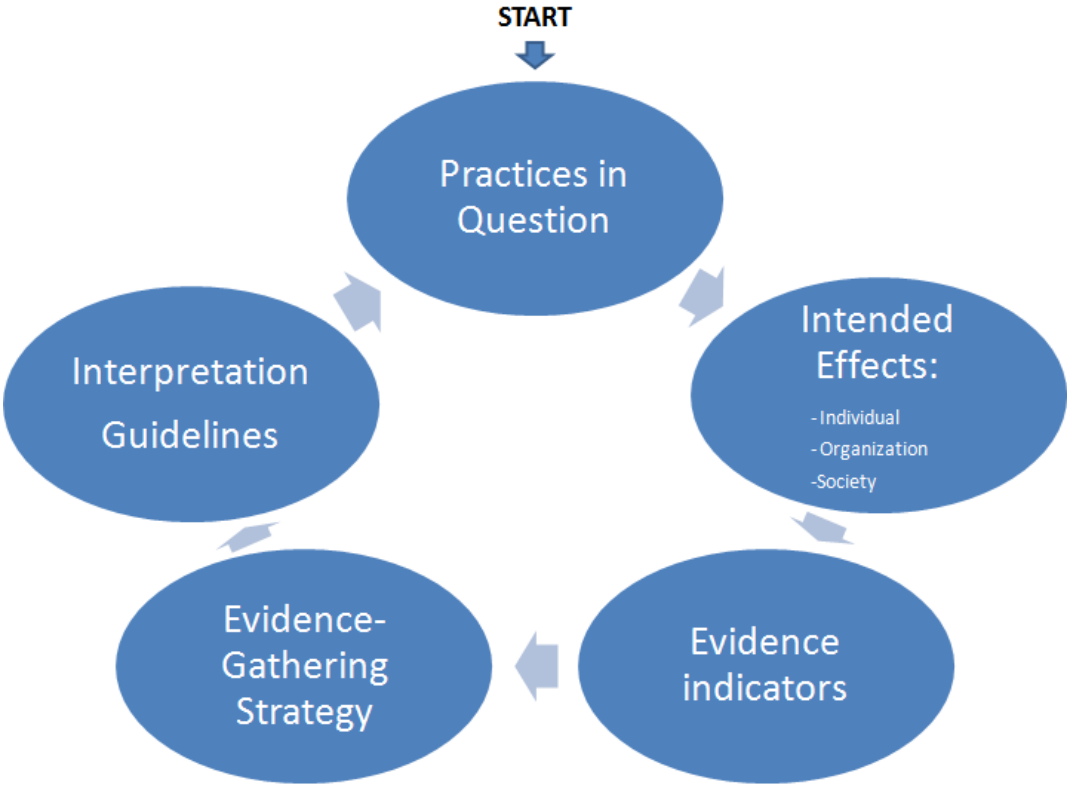

Figure 2. Integrated Evidence Based Practice Model

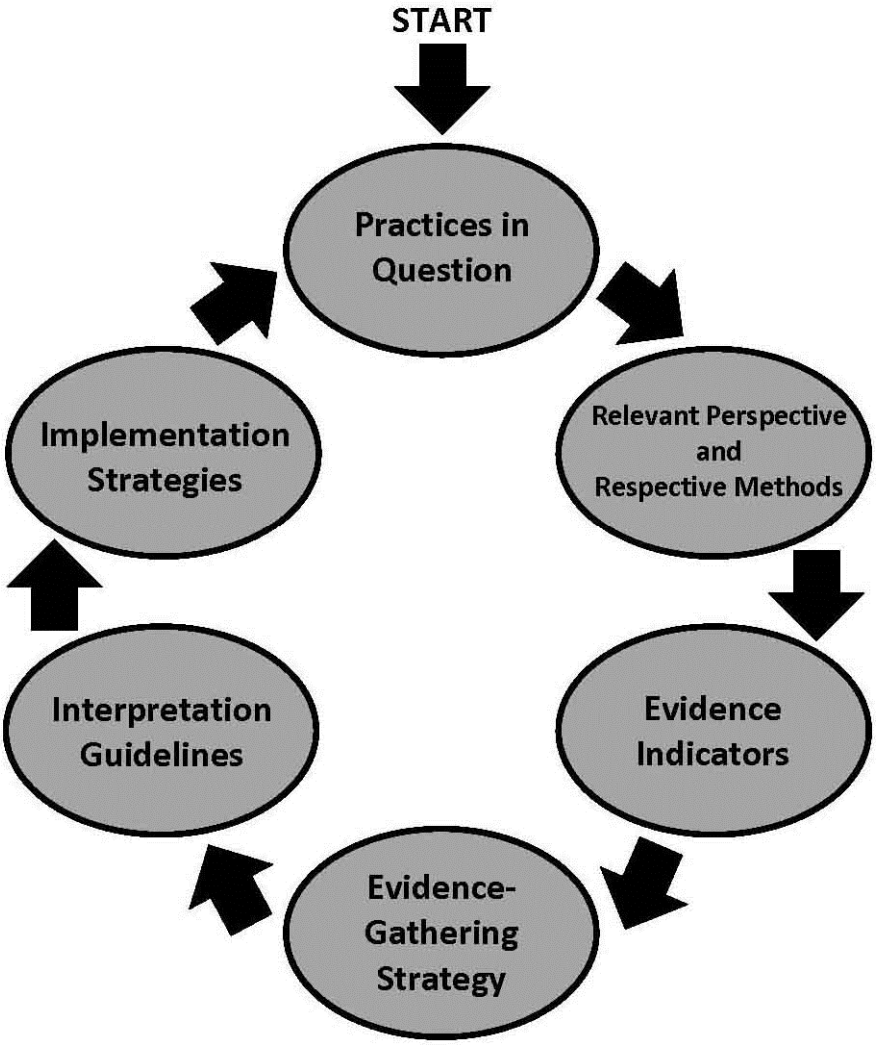

Table 1. Integrating Evidence-Based Practice Perspectives and Evaluation Standards

Evidence-Based Practices Perspective	*Conceptualization*	*Measurement Techniques*	*Evaluation Standards*
Empirical-Analytical	Focus on experimental or scientific evidence as a basis for evidence-based practices	Randomized trials Experimental/control designs Quasi-experimental designs Single case studies Validity, reliability, generalizability, objectivity	Focus on quality and robustness of effectiveness in terms of quantitative research (table 2) = effect size
Phenomenological-Existential	Focus on reported experiences of well-being as the basis for evidence-based practices	Self-report Case studies Pre-post comparisons Grounded theory approaches Narratives Ethnographies Participatory action research Credibility, transferability, dependability, confirmability	Focus on quality and robustness of effectiveness in terms of qualitative research (table 3) = Descriptive vividness Theoretical connectedness Methodological congruence Analytical preciseness Heuristic relevance Generalizability
Post-structural	Focus on public policy principles and outcomes such as self-determination, inclusion, and empowerment as a basis of evidence-based practices	Methodological pluralism	Dialectical integration of qualitative and quantitative research, effectiveness and relevance

Table 2. Effect Size standards of Robustness of Quantitative Evidence

Type of effect size estimate	*Examples of Included indices*	*Recommended Minimum Effect Size*	*Moderate effect*	*Strong effect*
Group difference	d, Δ, g	.41	1.15	2.70
Strength of association	r, R, , φ, ρ, partial r, β, r_h, tau	.2	.5	.8
Squared association indices	r^2, R^2, η^2, adjusted R^2, ω^2, ε^2	.04	.25	.64
Risk estimates	RR, OR	2.0	3.0	4.0

Table 3. Study Design and quality standards for Qualitative Evidence

Study Design *(cited from Daly et al., 2007)*	• *"Generalizable studies (level I) - clear indications for practice or policy may offer support for current practice, or critique with indicated directions for change.* • *Conceptual studies(level II) - weaker designs identify the need for further research on other groups, or urge caution in practice. Well-developed studies can provide good evidence if residual uncertainties are clearly identified.* • *Descriptive studies (level III) - demonstrate that a phenomenon exists in a defined group. Identify practice issues for further consideration.* • *Single case studies (level IV) - alerts practitioners to the existence of an unusual phenomenon".*
Quality standards *(cited from Cesario et al., 2002)*	• *"Descriptive vividness,* • *Theoretical connectedness - conceptual framework based on literature,* • *Methodological congruence clear report of data collection - (e.g. data-triangulation),* • *Analytical preciseness – clear report of analysis including issues of diversity and data saturation (explains differences between groups),* • *Heuristic relevance – generalizability of the findings with regard to relevant literature (to show how study applies to other situations or groups)".*

Table 4. Implementation Selection Criteria and Application Considerations

(‘Implementation Guidelines’)

Selection Criteria:

1. Practice is consistent with the organization or system’s mission.
2. Practice is described fully.
3. Effectiveness of the practice has been demonstrated.
4. Practice is applicable and relevant.

Application Considerations:

1. Be sensitive to the organization or system’s culture and receptivity.
2. Practice should be consistent with a social-ecological perspective of disability.
3. Practice is capable of being easily taught.
4. Organization or system is capable of evaluating the effectiveness of the practice.