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Training in Evidence-Based Interventions (EBIs): What are school psychology programs teaching?

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Abstract

This study examined the degree to which school psychology programs provided training in Evidence-Based Interventions (EBIs). Survey data were collected from 97 school psychology training directors to assess their familiarity, level of student exposure, and perceived importance of EBIs. This study also examined the contextual factors that interfere with EBI training, and whether students are taught to apply the criteria developed by Divisions 12, 16, and 53 of the APA when evaluating outcome research. Results indicated that relatively low percentages of respondents were familiar with the EBIs included on the survey, exposure to EBIs occurred more frequently in coursework than practical experiences, and EBIs were rated as either somewhat important or important. Lack of time was rated as the most serious challenge to EBI training and a high percentage of directors reported students were taught to apply the criteria developed by professional organizations in psychology and education when evaluating outcome research.

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Introduction

The field of school psychology, having a vested interest in developing the knowledge base regarding EBIs, created The Task Force on Evidence-Based Inter-

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ventions in School Psychology (hereafter called the Task Force), sponsored by the American Psychological Association (APA) Division 16 (School Psychology), the Society for the Study of School Psychology (SSSP), and endorsed by the National Association of School Psychologists (NASP). This Task Force is charged with reviewing and coding prevention and intervention studies for children, youth and families, and identifying interventions that have sound research support (Kratochwill & Stoiber, 2000, 2002; Stoiber & Kratochwill, 2000). A primary goal of the Task Force is to close the gap between research and practice by disseminating useful information to school psychology training programs and practicing school psychologists regarding intervention and prevention programs with strong empirical support. The ultimate goal of identifying and disseminating information regarding EBIs is to improve academic, behavioral, and social-emotional outcomes for all learners.

Training in EBIs

One way of facilitating practitioners' exposure to and competence in EBIs is to ensure that school psychology graduate students entering the workforce are trained in interventions with demonstrable efficacy. School psychology students with training and expertise in EBIs are more accountable for their services, more prepared to meet the demands of their current job, and are ultimately in a better position to improve student outcomes (Kratochwill & Stoiber, 2000). Although there is a strong interest in training psychologists to use EBIs, according to a recent survey of clinical psychology training programs and internships, training in these interventions remains limited (Crits-Christoph, Frank, Chambless, Brody, & Karp, 1995). This survey included 25 psychosocial interventions categorized as well-established or probably efficacious, and clinical psychology training directors indicated which interventions were taught in didactic courses and for which interventions they offered practicum experience. Results indicated significant variability in students' exposure to different treatments and that, on average, programs provided didactic instruction for 46% of the interventions listed (range=0–96%). Similarly, an average of 44% of the 25 interventions were offered in practicum (range=0–92%). Crits-Christoph et al. also found that more than 20% of the doctoral programs surveyed did not provide minimal coverage (25% of the interventions listed) of EBIs in coursework. Based on this survey, it appears that the knowledge base regarding EBIs has not generalized to the training of clinical psychologists in these interventions.

Challenges to EBI training

Graduate programs face several obstacles in providing training in EBIs. Faculty support for EBI training, for example, is considered a primary factor in determining how, when, and whether these interventions are included in coursework and practica (Calhoun, Moras, Pilkonis, & Rehm, 1998). Faculty support includes not only being competent to teach the interventions and supervise students' use of EBIs, but the ability to convey an objective attitude about the overall strengths and limitations of EBIs. Without core faculty trained in EBIs, programs must rely on outside experts to provide this training, which can be costly. In addition, there is the financial burden of

purchasing training materials, such as intervention manuals and videotapes, and the time involved in revising intervention curriculum. School psychology training programs may also face philosophical challenges to providing EBI training. For example, programs that embrace “generalist” training want their students to be exposed to a variety of theoretical orientations and techniques. However, EBIs have often been criticized for their emphasis on “specialized” intervention techniques (Calhoun et al., 1998). Furthermore, training programs with a non-behavioral orientation may resist EBI training because the majority of treatments identified as evidence-based are behavioral or cognitive-behavioral interventions (Lonigan, Elbert, & Bennett-Johnson, 1998). Another challenge to providing training in EBIs is that currently training guidelines specific to EBI training do not exist. Such guidelines would help specify standards to be met, such as what constitutes meaningful exposure to EBIs (e.g., didactic instruction, course readings, practicing the intervention). In addition, such guidelines would indicate the type of EBI programs (e.g., prevention programs, intervention programs for social, behavioral, and academic concerns) and number of EBIs for which a student should demonstrate competence.

Benefits to EBI training

Calhoun et al. (1998) outline several benefits to incorporating EBIs into psychology training programs. These benefits include preparing practitioners to meet accountability demands, improving client outcomes, streamlining current curricular practices to reflect best practice, and de-emphasizing outmoded methods of training and intervention practices. In addition, the training process may also be enhanced because of the resources and materials that often accompany EBIs (e.g., treatment manuals, training videos, treatment integrity measures, and reliable outcome measures that have been used to evaluate treatment effectiveness). Finally, training in EBIs also helps promulgate the scientist-practitioner training model and ensures that graduate students develop a commitment to having scientific knowledge drive their practice.

Similar to educational and mental health service delivery systems, graduate training programs are equally accountable for providing state-of-the-art, updated training that reflects practices supported by research. At this time however, little is known regarding either the degree to which school psychology students receive training in EBIs, or about the perspectives held by school psychology training programs toward EBIs. The purpose of this study was to investigate school psychology graduate programs' level of training in EBIs and to understand the barriers and constraints to integrating EBIs into school psychology training programs. Specifically, the study addressed the following research questions: (1) What percentage of school psychology training directors are familiar with the EBIs included in the survey and endorse students' exposure to those EBIs? In addition, how important are the EBIs to the training of school psychology graduate students? (2) What do program directors identify as the most serious challenges to providing training in EBIs? (3) What percentage of respondents report that programs teach the criteria developed by Divisions 12, 16, and 53 of the APA for evaluating the quality of intervention research, and how important is the criteria in evaluating the quality of intervention outcome studies?

Method

Participants

School psychology training directors ($N=217$) who were affiliated with known school psychology training programs listed in the Directory of School Psychology Graduate Programs (Thomas, 1998) were invited to participate in the study. This directory lists all school psychology programs, not just those approved by national associations. A total of 97 director surveys were returned, with a 44% return rate. Table 1 illustrates the demographic characteristics of the training programs surveyed. These data indicate that the greatest percentage of directors surveyed were from programs offering specialist degrees (30%), followed by specialist and doctorate (17.5%), and masters (16.5%). In addition, the most common training philosophy was scientist-practitioner (43.3%); and behavioral/cognitive-behavioral theory (46.4%) was the most common theoretical approach emphasized.

Procedure

Cover letters were mailed to 217 school psychology training directors that provided instructions for completing and returning the survey, and outlined briefly how the survey information would be used. The cover letter served as informed consent and described compliance with human participants' guidelines. Training directors were asked to complete the survey within 3 weeks. Directors who did not respond by that deadline were sent a follow-up e-mail requesting they complete the survey within one week. To ensure that program responses remained confidential, respondents were instructed not to write their name anywhere on the survey. An initial draft of the survey was developed and revised, and then piloted with a sample of 5 school psychology training directors. These directors were asked to complete the survey and provide feedback regarding specific ambiguities and overall comprehension. Their suggestions and revisions were integrated into the final version of the survey. Directors who participated in the pilot were not excluded from the final sample.

Instrumentation

The first section of the survey included a list of interventions already identified as evidence-based by Division 12 (Society of Clinical Psychology) and Division 53 (Child Clinical Psychology) of the APA, and was developed to obtain responses to the first research question. In this study, EBIs were defined generally as interventions in which highly regarded scientific methods established the program as effective (Barlow, Levitt, & Bufka, 1999). The list of interventions came from extensive literature reviews and meta-analytic studies that identified empirically supported interventions for children with behavior problems (Brestan & Eyberg, 1998) and Attention Deficit Hyperactivity Disorder (Pelham, Wheeler, & Chronis, 1998). These interventions were selected because of their particular relevance to the practice of school psychology. Although these intervention were not coded according to the School Psychology Task Force

Table 1
Demographic characteristics of training programs

Variable	Frequency, <i>N</i>	Percentage of those responding
<i>Degree(s) offered</i>		
Masters (36, 48, or 60 h)	16	16.5
Specialist	29	30
Doctorate	12	12.4
Masters + Specialist	8	8.2
Masters + Doctorate	11	11
Specialist + Doctorate	17	17.5
Masters + Specialist + Doctorate	4	4.1
<i>Accreditation status</i>		
State Dept. Accreditation	17	17.5
NASP/NCATE	15	15.5
APA	3	3.1
State Dept. Accreditation + NASP/NCATE	32	33
State Dept. Accreditation + APA	2	2.1
NASP/NCATE + APA	5	5.2
State Dept. Accreditation + APA + NASP/NCATE	22	22.7
NCATE	1	1
<i>Training philosophy</i>		
Practitioner	16	16.5
Practitioner-scholar	9	9.3
Practitioner-scientist	21	21.6
Scholar-practitioner	2	2.1
Scientist-practitioner	42	43.3
Scientist-scholar-practitioner	2	2.1
Theorist-practitioner	1	1
Other	4	4.1
<i>Theoretical Approach</i>		
Behavioral/cognitive behavioral	45	46.4
Eclectic	34	35
Ecological	8	8.2
Humanistic/interpersonal	2	2.1
Psychodynamic	3	3.1
Other	5	5.2
<i>Specialty training offered^a</i>		
None	66	69
Clinical-school	2	2.1
Counseling-school	13	13.4
Counseling-clinical-school	6	6.2
Other	8	8.2

NASP=National Association of School Psychologists, NCATE=National Council for Accreditation of Teacher Education. APA=American Psychological Association.

^a There were missing data for two programs for this variable.

criteria, for the purpose of this study the selected interventions are considered to be EBIs because they were found to have strong evidence to support them (see Brestan & Eyberg; Pelham et al.). A brief explanation of the intervention and a citation of the major outcome studies associated with the intervention also was included on the survey. In addition to the EBIs, three fictitious interventions were included in the survey. These items were designed to detect acquiescence, social desirability, or the deliberate faking of responses. Endorsement of these interventions is considered a source of error that would necessitate caution when considering the validity of responses.

For the actual ratings, two constructs guided the development of the survey. The first construct included directors' *familiarity* with the interventions listed. Directors were instructed to mark *not familiar* if they had never heard of the intervention, *somewhat familiar* if they were familiar with the general techniques and principles of the intervention, and *familiar* if they were familiar with the intervention referenced. The second construct included trainers' perceptions regarding student exposure to the EBIs listed on the survey. Thus, trainers were asked to indicate the level of exposure students received for each intervention (i.e., *no exposure*, *exposure*, *experience*, *N/A*). The exposure ratings were based on a comprehensive model of training developed by the APA for approval of doctoral programs (Roberts et al., 1998). Exposure was defined as learning about the intervention in a didactic seminar or through observation in an applied setting. Experience was defined as practicing the intervention in a case, practicum, or research project. If an intervention was not familiar, respondents marked N/A under "Level of Exposure," but still provided an importance rating based on the description of the intervention. Respondents rated the importance of the intervention to the training of school psychologists using a 4-point Likert scale, with response choices ranging from *not important* to *critical*. Respondents were also asked to indicate other EBIs that were taught in their program but not included in the survey. This procedure was used to avoid underestimating EBI training that may occur in school psychology programs and to capture other interventions for which school psychology programs provide training that were not identified by Divisions 12 and 53 (e.g., academic interventions, prevention programs).

The second section of the survey focused on identifying the challenges that training programs face and the resources that programs need to include EBIs in their training curricula. This portion of the survey was developed to obtain responses to the second research question. Directors rated the seriousness of different challenges to providing training in EBIs, including lack of time, financial constraints, lack of information about EBIs, need for faculty training in EBIs, and faculty resistance to using or teaching EBIs. These challenges were based on a review of the literature related to EBI training (Calhoun et al., 1998). A 4-point Likert scale was used, with response choices ranging from *not a problem* to *serious*. Directors were also asked to note any additional challenges to providing EBI training that were not covered in the survey. The third section of the survey included the criteria identified by Divisions 12, 16 and 53 of the APA as critical for evaluating the quality of intervention research and were developed to obtain responses to the third research question. Directors indicated which criteria were taught (i.e., *yes* or *no*) and rated the importance of the criteria for evaluating the quality of intervention outcome studies (i.e., *not important* to *critical*).

Results

What percentage of school psychology training directors are familiar with the EBIs included in the survey, and endorse students' exposure and experience to those EBIs? In addition, how important is each of these interventions to the training of school psychology graduate students?

First, a high percentage of the sample ($M\%=70$) rated the fictitious EBIs as not familiar (range, 65–80%). In addition, a high percentage of the directors rated students as receiving no exposure to those fictitious interventions ($M\%=82$; range, 81–86%). Low levels of familiarity and exposure to these fictitious interventions increases one's confidence that acquiescence, social desirability, or the faking of responses was not a source of systematic error in this study. Those directors endorsing being familiar, or endorsing student exposure or experience with those fictitious interventions, were excluded from these analyses.

Familiarity, exposure, and importance of EBIs

Familiarity with EBIs

Table 2 presents the percentage of directors who indicated being familiar with each of the EBIs listed on the survey. With respect to the most and least familiar interventions, 76% of directors reported being familiar with Rational Emotive Therapy (Block, 1978), followed by 58% being familiar with Behavior Modification Across Home and School (Gittleman et al., 1980). Parent Training Program (Patterson & Gullion, 1968) was the third most familiar intervention among directors, with 54% of directors responding that they were familiar with this EBI.

Table 2 also illustrates that only 18% of directors were familiar with Time-Out Plus Signal Seat (Hamilton & MacQuiddy, 1984), only 17% were familiar with Multisystemic Therapy (Henggeler, Melton, & Smith, 1992), and only 9% of the sample was familiar with Delinquency Prevention Program (Tremblay, Pagani-Kurtz, Masse, Vitaro, & Pihl, 1995). When averaging across all interventions, 29% of directors reported being not familiar, 30% reported being somewhat familiar, and 41% reported being familiar with the EBIs listed on the survey.

Exposure and experience with EBIs

When evaluating exposure (i.e., learning about the intervention in didactic seminars or through observation in applied settings) and experience (i.e., practicing the intervention in a case, practicum, or research project), Table 2 shows that the greatest percentage of directors (63%) reported that students were exposed to Anger Control Training with Stress Inoculation (Feindler, Marriott, & Iwata, 1984). Relative to the other EBIs, a high percentage of directors also reported student exposure to Assertiveness Training (Huey & Rank, 1984) and Problem-Solving Skills Training (Kazdin, Esveltdt-Dawson, French, & Unis, 1987). Table 2 also highlights that the greatest percentage of directors (40%) reported that school psychology graduate students receive experience in Behavior Modification Across Home and School (Gittleman et al., 1980), followed by 35%

Table 2

Percentage of directors reporting familiarity, exposure, and experience with the EBIs

EBI	Familiar	Exposure	Experience
Rational-Emotive Therapy (Block, 1978)	76	55	25
Behavior Modification Across Home and School (Gittleman et al., 1980)	58	40	40
Parent Training Program (Patterson & Gullion, 1968)	54	54	23
Assertiveness Training (Huey & Rank, 1984)	53	60	12
Behavior Modification Across Home and School (O'Leary, Pelham, Rosenbaum, & Price, 1976)	52	36	35
Parent Training Program (Anastopoulos, Shelton, DuPaul, & Guevremont, 1993)	52	48	22
Problem-Solving Skills Training (Kazdin, Esveltd-Dawson, French, & Unis, 1987)	47	57	27
Helping the Non-Compliant Child (Peed, Roberts, & Forehand, 1977)	43	42	14
Anger Control Training with Stress Inoculation (Feindler, Marriott, & Iwata, 1984)	31	63	9
Parent–Child Interaction Therapy (Eyeberg, Boggs, & Algina, 1995)	27	27	10
Videotape Modeling Parent Training Program (Webster-Stratton, 1994)	26	25	8
Anger Coping Therapy (Lochman, Lampron, Gemmer, & Harris, 1989)	26	27	12
Behavioral Parent Training (Pisterman et al., 1992)	23	34	11
Behavioral Parent Training Plus Self-Control Training (Horn, Ialongo, Greenberg, Packard, & Smith-Winberry, 1990)	23	34	11
Time-Out Plus Signal Seat (Hamilton & MacQuiddy, 1984)	18	25	10
Multisystemic Therapy (Henggeler, Melton, & Smith, 1992)	17	27	2
Delinquency Prevention Program (Tremblay, Pagani-Kurtz, Masse, Vitaro, & Pihl, 1995)	9	16	1

Familiar=director's familiarity with the specific intervention referenced in the survey. Exposure=director's perceptions regarding student's level of exposure to the intervention through didactic seminar or observation in an applied setting. Experience=director's perceptions regarding student's experience practicing the EBI in a case, practicum, or research project.

reporting student experience with a similar behavioral intervention (O'Leary, Pelham, Rosenbaum, & Price, 1976). Relative to the other interventions, small percentages of directors (e.g., 16%) reported students receive exposure to Delinquency Prevention Program (Tremblay et al., 1995).

Similar to the familiarity and exposure ratings, relative to the other EBIs, small percentages of directors (e.g., 8%, 2%, and 1%) reported that graduate students receive direct experience with Videotaped Modeling Parent Training Program (Webster-Stratton, 1994), Multisystemic Therapy (Henggeler et al., 1992), and Delinquency Preven-

tion Program (Tremblay et al., 1995), respectively. When averaging across all EBIs, 41% of directors reported that students receive no exposure, 39% reported students receive exposure, and 30% reported students receive experience with the EBIs listed on the survey. As a whole, directors reported that EBI training occurred more frequently in the context of didactic coursework or observation in an applied setting than actual experience.

Additional interventions not covered on the survey

On the survey, trainers also were given the opportunity to list other EBIs taught in their training programs that were not covered in the survey. According to directors, some of the more frequently taught interventions that were considered evidence-based, but fell outside the range of what was included in the survey, included: *Skillstreaming the Adolescent: A Structured Learning Approach to Teaching Prosocial Skills* (Goldstein, Sprafkin, Gershaw, & Klein, 1980; $n=6$), Behavioral Consultation ($n=4$), *I Can Problem Solve: An Interpersonal Cognitive Problem-Solving Program* (Shure, 1992, $n=4$), behavior modification ($n=4$), Aggression Replacement Training (Goldstein, 1994, $n=3$), *Defiant Children: A Clinician's Manual for Parent Training* (Barkley, 1987, $n=3$), and academic interventions ($n=3$).

Importance of EBIs

Respondents rated the importance of the EBIs to the training of school psychologists on a 4-point scale with choices ranging from 1=*not important* to 4=*critical*. Respondents rated all of the EBIs as either *somewhat important* or *important*. Behavior Modification across Home and School (Gittleman et al., 1980) received a high importance rating ($M=2.8$, $S.D.=.87$), in addition to a similar behavioral intervention (O'Leary et al., 1976) ($M=2.8$, $S.D.=.87$), and Problem-Solving Skills Training (Kazdin et al., 1987) ($M=2.8$, $S.D.=.72$). Time-out Plus Signal Seat (Hamilton & MacQuiddy, 1984) received the lowest importance rating ($M=2.1$, $S.D.=.84$), in addition to Multisystemic Therapy (Henggeler et al., 1992) ($M=2.1$, $S.D.=.75$), and Parent–Child Interaction Therapy (Eyberg, Boggs, & Algina, 1995) ($M=2.2$, $S.D.=.86$).

What do training directors identify as the most serious challenges to providing training in EBIs?

Respondents rated the seriousness of different challenges to providing training in EBIs (i.e., lack of time, financial constraints, lack of information about EBIs, the need for faculty training in EBIs, and faculty resistance to using or teaching EBIs) on a 4-point scale with choices including 1=*not a problem*, 2=*small*, 3=*moderate*, 4=*serious*. Results indicated that lack of time was rated as the most serious challenge to EBI training ($M=3.0$, $S.D.=1.0$), followed by financial constraints ($M=2.7$, $S.D.=1.0$), need for faculty training ($M=2.4$, $S.D.=1.0$), and lack of information related to using or teaching EBIs ($M=2.2$, $S.D.=.95$). Faculty resistance to using or teaching EBIs was rated as the least serious challenge ($M=1.7$, $S.D.=.91$) and none of the mean challenge ratings fell in the serious range. On the survey, respondents were also given the opportunity to list other challenges not covered in the survey. Several responses were related to the nature of the current school psychology curriculum and perceptions that

the curriculum is inflexible. For example, “other required coursework,” “resistance to changing the curriculum,” and “curriculum overly focused on assessment” were rated as serious challenges by respondents. In addition, two directors in the sample held internship sites as responsible for students’ acquisition of information and training on EBIs.

What percentage of respondents report that programs teach the criteria developed by Divisions 12, 16, and 53 of the APA for evaluating the quality of intervention research, and how important is the criteria in evaluating the quality of intervention outcome studies?

Overall, high percentages of directors (range, 75–99%) reported that their students are taught to apply the criteria developed by professional organizations in clinical and school psychology when evaluating intervention outcome research (see Table 3). This finding suggests that according to directors, there is adequate coverage of these criteria in school psychology training programs. Those criteria for which the lowest percentage of directors endorsed teaching students included: “adherence to intervention manuals” (75%) and “implementation fidelity” (81%). Directors were also asked to rate the importance of the criteria developed by these professional organizations to evaluate the quality of intervention research on a 4-point Likert scale with response choices ranging from 1=*not important* to 4=*critical*. Results indicated that all of the criteria were rated as falling between important and critical (see Table 3). Directors rated “strengths and weaknesses of the research design” as the most important criteria ($M=3.7$, $S.D.=.63$), followed by “findings support the intervention” ($M=3.6$, $S.D.=.61$), and “reliable

Table 3
Percentage of directors endorsing teaching each criterion and mean importance ratings of each criterion

Criterion	Percentage	Mean Importance Ratings (S.D.)
Findings support intervention	99	3.6 (.61)
Random assignment	99	3.4 (.68)
Statistical significance	99	3.4 (.73)
Strengths and weaknesses of research designs	98	3.7 (.63)
Strengths and weaknesses of comparison groups	98	3.3 (.71)
Importance of sample size, power, and control of Type I errors	98	3.4 (.70)
Replication	97	3.2 (.79)
Reliable baseline established	96	3.5 (.68)
Site or setting of implementation	94	3.1 (.79)
Clinical significance	93	3.5 (.68)
External validity	91	3.2 (.74)
Durability of intervention effects	87	3.1 (.74)
Intervention more effective than control or equivalent to an established intervention	83	3.4 (.67)
Implementation fidelity	81	3.2 (.76)
Adherence to intervention manuals	75	3.2 (.76)

Respondents indicated whether the criterion was taught (i.e., *yes* or *no*) and importance of the criteria to evaluate the quality of intervention research (i.e., 1=*not important* to 4=*critical*).

baseline established” ($M=3.5$, $S.D.=.68$). Relative to the other criteria, mean importance ratings for “external validity” ($M=3.2$, $S.D.=.74$), “replication of the intervention” ($M=3.2$, $S.D.=.79$), and “site or setting of implementation” ($M=3.1$, $S.D.=.79$) were rated as less important than the other criteria on the survey.

Finally, to give an overall picture of respondents’ attitudes towards EBIs, directors strongly endorsed the development and use of EBIs in the field of school psychology. For example, 31% of trainers reported the development and use of EBIs to be “good” for the field of school psychology, while 65% of the sample reported the development and use of EBIs to be “very good” for the field.

Discussion

This study examined the degree to which school psychology graduate programs provide training in EBIs, the barriers to EBI training, and whether school psychology graduate students are taught to apply Divisions 12, 16 and 53 criteria when evaluating outcome research. As such, it provides an initial “pulse” on the current level of EBI training in school psychology programs and an indication of future directions the field may want to pursue.

Level of EBI training

The greatest percentages of directors (76%) were familiar with Rational Emotive Therapy (Block, 1978). This is a cognitive-behavioral intervention based on Ellis’ (1962) theory that affective distress is the result of irrational beliefs; the focus of the intervention is on altering distorted cognitions. Behavior Modification Across Home and School (Gittleman et al., 1980) was another EBI in which a large percentage of directors (58%) reported being familiar. In this intervention, parents and teachers are taught to reinforce and strengthen positive behavior and consequence undesirable behavior, while students earn reinforcers at home and school for meeting behavioral goals. Parent Training Program (Patterson & Gullion, 1968) was also familiar to a high percentage of directors. This is a well-established EBI based on operant learning principles in which parents are taught to monitor behavior problems, reward incompatible behaviors, and ignore or punish deviant behaviors.

The least familiar interventions were multi-component, ecologically driven approaches targeting the individual, the family, the peer group, and the school. Multisystemic Therapy (MST; Henggeler et al., 1992), for example, is considered an indicated prevention program that provides comprehensive, wraparound services targeting a few students with severe behavior problems. Similarly, Delinquency Prevention Program (Tremblay et al., 1995) is a comprehensive school-based prevention program that involves parent training, social skills training, and self-control training. Although these interventions are considered the gold standard of prevention programming because they target multiple risk factors at multiple levels, these interventions also require substantial personnel and financial resources, and have typically been evaluated in the context of tightly controlled efficacy trials rather than applied settings.

When evaluating exposure and experience with the interventions included on the survey, those EBIs for which the greatest percentage of directors were familiar were not the same interventions for which directors reported student experience. The greatest percentage of directors reported students are exposed to Anger Control Training with Stress Inoculation (Feindler et al., 1984), which is a cognitive-behavioral intervention that targets students' emotional arousal and cognitions. Assertiveness Training (Huey & Rank, 1984) is another cognitive-based intervention that conceptualizes aggression as a skill deficit and that teaches assertive communication skills. The greatest percentage of directors also reported that students receive experience with interventions in which parents and teachers are taught to reinforce and strengthen positive behaviors and consequate undesirable behaviors (Gittleman et al., 1980; O'Leary et al., 1976). Similar to the familiarity ratings, a small percentage of directors reported student exposure and experience with Delinquency Prevention and MST. When comparing exposure and experience ratings, respondents indicated that exposure to these EBIs occurred more frequently in coursework and didactics than actual clinical experience.

When evaluating the interventions that fell outside of those listed on the survey but were considered evidence-based by respondents, some of the more frequently listed interventions were those with promising empirical support (e.g., *I Can Problem Solve*, behavioral consultation, cognitive behavioral interventions for anxiety and depression). However, other interventions deemed as empirically supported had a much weaker evidence-base, such as *Skillstreaming the Adolescent* (Goldstein et al., 1980) and *A Clinician's Manual for Parent Training* (Barkley, 1987). Results from this survey did not answer the question of what criteria respondents invoked to conclude these interventions were evidence-based.

When evaluating the social value of the interventions, all of the EBIs were rated, on average, as either *somewhat important or important*. Interestingly, despite the fact that familiarity with many of the individual interventions was relatively low, respondents still endorsed these interventions as being important to the training of school psychologists. The relative importance of these interventions attributed by trainers helps document the standards and expectations for training, in addition to the potential positive contribution that these interventions can make in training programs. Within a social validity framework, given the relatively high importance ratings assigned to the EBIs and the strong endorsement by respondents to develop and use EBIs in the field of school psychology, recommendations to integrate more EBIs into school psychology curricula may be perceived as acceptable and thus more successfully integrated.

Challenges to EBI training

The second major finding was that respondents rated lack of time as the most serious challenge to training in EBIs. However, a more precise understanding of which aspect(s) of time impede EBI training remains unknown. For example, is it a lack of time allotted in coursework, time constraints related to increasing faculty skills and competencies in teaching EBIs, or the time required to modify intervention courses? Given that "lack of information" and "faculty resistance" was rated by directors, on average, as a *small*

problem, it is conceivable that there is a willingness on the part of faculty to increase EBI training, and that faculty are perceived as having adequate information to do so. Although the “other challenges” rated by respondents were small in number, it is nonetheless informative that those other challenges were related mostly to the curriculum (e.g., inflexibility of the curriculum, resistance to changing the curriculum). When considering challenges to EBI training, it is also important to consider the significant constraints that school psychology graduate programs face in adding additional courses to the existing core requirements. This is especially the case for programs that train at the specialist level, and need to remain competitive by not exceeding 60 semester credits. Another significant challenge to EBI training is that the techniques and procedures for learning an EBI cannot be taught in isolation, as there also needs to be a strong emphasis on teaching nonspecific treatment components (e.g., empathy, listening, establishing rapport). Development of such competencies cannot occur merely by reading a treatment manual or watching training videos.

Training in the criteria used to evaluate outcome research

The third major finding in this study was that overall high percentages of participants reported that students were taught to apply criteria developed by Divisions 12, 16, and 53 of the APA when evaluating outcome research. Relative to the other criteria, however, lower percentages of directors reported that students were taught about the importance of adhering to treatment manuals and treatment fidelity. Since the beginning of the EBI movement, much debate has ensued with respect to requiring the use of intervention manuals because of their “cookbook” approach that oversimplifies the intervention process (Kendall, 1998). It seems clear that there continues to be debate regarding the use of treatment manuals and issues of adherence. While the majority of the criteria were rated, on average, as *important* or *critical*, exceptions to these high importance ratings included: “site or setting in which an intervention took place” and “replication of the intervention.” The relative importance of the baseline criterion in comparison to the other criteria may speak to the important role that single-participant research has had in the field of school psychology. Although trainers reported teaching these criteria and perceive them to be important, given the relatively low levels of exposure and experience to EBIs included in the survey, it may be that these criteria are not necessarily being taught in the context of EBIs. One important aspect of EBI training will be to teach students to apply these criteria with fidelity when evaluating evidence in support of interventions they are learning about in their coursework and practica experiences. What is not known is the courses for which these criteria are being taught and the degree to which trainers are receptive to incorporating this information into intervention courses. Clearly, disseminating the criteria developed by the Task Force for evaluating interventions will be facilitated by the fact that many programs already teach these criteria and trainers in this sample assigned relatively high importance ratings to these criteria. Akin to the acceptability literature (Elliott, 1998), if the individuals responsible for teaching the criteria to evaluate outcome research (i.e., training directors) embrace the criteria and rate it as acceptable, they are also more likely to infuse it in their curriculum.

Limitations

One limitation of this study is the small sample size. Although the response rate was reasonable (44%) for survey research, many training directors were not represented in this study. In addition, there was a slight under-representation of programs offering specialist and specialist and doctorate degrees in this sample. When the aforementioned issues occur, there is increased concern that those trainers who responded to the survey are somehow different from those who did not respond, which may limit the generalizability of the information gathered. These results indicated lower levels of familiarity and exposure to the fictitious EBIs, which increases one's confidence that acquiescence and social desirability was not a large source of systematic error. However because survey data are self-report, they are still subject to higher levels of systematic error than more direct measures of a particular phenomena.

The design of the survey may also be an inherent limitation to the study. First, the list of EBIs, challenges, and criteria to evaluate outcome research was not exhaustive. Therefore, it is possible that errors of omission occurred. For example, in the absence of interventions identified by the Task Force as evidence-based, the list of EBIs on the survey were identified by the field of clinical psychology. Because clinical psychology is rooted in the medical model, and has historically emphasized matching treatments to specific disorders, it is plausible that relatively low levels of familiarity and exposure to the EBIs was due to philosophical differences in intervention research between the fields of clinical and school psychology. Furthermore, although respondents were given the opportunity to list EBIs taught in coursework that fell outside the range of interventions included in the survey, the original list was limited to interventions addressing behavioral problems and ADHD. Although these were considered problems that school psychologists would be most likely to encounter in their practice, the list did not include academic interventions, or interventions to address internalizing disorders (e.g., anxiety and depression). These categories of interventions may also be taught widely by school psychology training programs. Another limitation to the construction of the survey was that the authors cited with some of the interventions were not always those authors most well known with a particular technique. This could have potentially misled respondents to rate an EBI as unfamiliar because of unfamiliar with the author cited rather than the EBI.

Future directions

First, it will be critical for a replication of this study to occur using interventions that have been identified as evidence-based by the Task Force. These interventions will be specific to the field of school psychology, will have a stronger academic and preventative focus, will not only be disorder-based, and will reflect criteria for evaluating evidence that is strongly valued by the field of school psychology (see [Kratochwill & Stoiber, 2002](#)). Data generated from replication studies will be critical to further understanding the knowledge base that trainers and students have regarding EBIs specific to the field of school psychology.

Second, this study focused on the content of intervention training, however, future research should explore the process of training graduate students to master interventions

that have a strong evidence-base. For example, does allegiance, theoretical approach, familiarity, ease of teaching, or empirical support influence decisions about selecting interventions to teach? In addition, if empirical support is a factor that influences decisions to teach a specific intervention, which criteria are currently being invoked to evaluate the evidence-base of such interventions? For example, when respondents were asked to include EBIs that their programs teach that fell outside the range of EBIs listed on the survey, which criteria were they invoking when concluding that those additional interventions were EBIs? As the work of the Task Force progresses, it will be important to disseminate information to trainers that will help them select interventions to teach that have been subject to standardized criteria for evaluating EBIs.

Future research relating to the process of intervention training should also include evaluation of the training models that are most effective in developing students' mastery of an EBI. For example, what models of instruction should be used (i.e., didactic, applied, or a combination), what are the training requirements, what resources are required, and what components of different interventions are difficult to master? Training programs may also consider a competency-based model of teaching EBIs that is similar to how some programs teach cognitive assessment measures (e.g., requiring students to master specific EBIs). Finally, although data were gathered regarding what school psychology programs are purportedly teaching based on reports from directors, it will be critical to explore the interventions that practitioners are currently using in the field. For example, how familiar are practitioners with EBIs, and how often are they used in practice? In addition, what decision process are practitioners using when selecting interventions and what methods for evaluating the effectiveness of interventions are being used?

Conclusions

This study suggests that school psychology, as a field, is supportive of the development and use of EBIs. This position was evident through strong ratings in support for EBIs, relatively high importance ratings for the individual interventions listed on the survey, and that faculty resistance to using or teaching EBIs was rated as a small challenge to EBI training. Time and financial constraints, on the other hand, are two challenges that the Task Force must consider closely when disseminated information to training programs. In addition, although results from this study suggest that students in school psychology programs are taught to apply the criteria developed by professional organizations when evaluating outcome research, it will be important for training programs to teach these criteria in the context of intervention training and evaluation of intervention research. Although familiarity and exposure to these interventions varied considerably across programs, it seems clear that training programs would benefit from more information on EBIs identified by the Task Force as information becomes available.

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