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ORIGINAL ARTICLE

Clinical Supervision of Mental Health Professionals Serving Youth: Format and Microskills

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Abstract
Clinical supervision is an element of quality assurance in routine mental health care settings serving children; however, there is limited scientific evaluation of its components. This study examines the format and microskills of routine supervision. Supervisors ($n=13$) and supervisees ($n=20$) reported on 100 supervision sessions, and trained coders completed observational coding on a subset of recorded sessions ($n=57$). Results indicate that microskills shown to enhance supervisee competency in effectiveness trials and experiments were largely absent from routine supervision, highlighting potential missed opportunities to impart knowledge to therapists. Findings suggest areas for quality improvement within routine care settings.

Keywords Clinical supervision · Child mental health services · Evidence-based practice

Introduction

Clinical supervision (hereafter, "supervision") is a primary method by which psychologists and other mental health professionals learn psychotherapeutic practice (Falender et al. 2004). Supervision is a relationship whereby clinicians receive ongoing clinical support as part of their work in an agency or clinic (Schoenwald et al. 2008) and may be understood as a formal provision that manages, supports, develops, and evaluates clinical work (Milne 2009). Supervision occurs weekly in most child-serving community mental health clinics and is a routine aspect of typical practice (Schoenwald et al. 2008). Professional psychology trainees engage in extensive practicum experiences in these community settings (Hatcher et al. 2012) as do master's level and pre-licensure providers (e.g., social workers, professional counselors, psychologists) whose fieldwork is considered the most significant component of their training (Bogo 2015). Indeed, graduate training programs and state licensing bodies depend on supervision in these settings to teach trainees the nuts and bolts of service delivery (Davila and Hajcak 2012). Therefore, supervision in routine, community care settings has implications for the training of the mental health workforce.

General guidelines for supervision (e.g., American Psychology Association 2015; Association for Counselor Education and Supervision 2011; National Association of Social Workers Association of Social Work Boards 2013) are dominated by statements about the macro issues of supervision (e.g., length of supervision, use of supervision contracts) that could be complemented by attention to more specific or microskill level (James et al. 2008). Supervisory microskills are the moment-to-moment activities supervisors use to promote learning and supervisee competence in delivering therapy, such as using observation, giving feedback, self-disclosing, and using experiential learning activities such as modeling and role-play (James et al. 2008). Supervisory microskills are theorized to promote formative goals of supervision whereby supervisees develop clinical skills and knowledge, also described as clinical competency (Milne 2009). Development of therapist competence is proposed to be essential to clinical practice because competency in delivering treatments has been linked to youth outcomes (see Hogue et al. 2008; Schoenwald et al. 2009). Supervisory microskills have also been shown to contribute to therapist adherence (Henggeler et al. 2002), or the extent to which the therapist delivers a treatment as intended, as well as client outcomes (Callahan et al. 2009; Ng 2005; Schoenwald et al. 2009). The majority of the existing literature on supervisory microskills has taken place within the context of treatment

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effectiveness studies and controlled research experiments, discussed next.

An effectiveness trial of Multisystemic Therapy (MST) found that supervision that focused on discussion and practice of the intervention strategies specific to MST predicted greater adherence to MST principles in therapy, which in turn was associated with greater reductions in youth internalizing and externalizing problems (Schoenwald et al. 2009). An effectiveness trial of a dissonance-based eating disorder prevention program that utilized an enhanced supervision component also demonstrated an impact on client outcomes (Stice et al. 2013). The enhanced supervision provided supervisees with corrective feedback based on review of video recorded group sessions and produced effects that were 83% larger than effects observed in a separate effectiveness trial of the program without use of enhanced supervision (Stice et al. 2009). Lastly, in an effectiveness trial of the Modular Approach to Therapy for Children (MATCH; Chorpita and Weisz 2009) use of experiential learning strategies (role-play and modeling) predicted implementation of intended practices in therapy, whereas discussion of practices without these microskills did not (Bearman et al. 2013).

Controlled experiments have also examined supervisory microskills. In an analogue experiment testing supervisory microskills, supervision that included corrective feedback based on review of recorded therapy practice, as well as experiential learning strategies (modeling and role-play) resulted in increased therapist competency relative to supervision that lacked these components (Bearman et al. 2017). In a head-to-head comparison of two supervision conditions in a randomized controlled trial of Motivational Interviewing, supervisees that received individualized, corrective feedback based on review of recorded therapy sessions as well as skills coaching via behavioral rehearsal and role-play significantly increased their competency in Motivational Interviewing strategies compared to supervisees that received supervision without such microskills (Martino et al. 2016). Similarly, in a randomized controlled trial comparing two models of supervision for the parent management intervention Incredible Years, therapists that received supervision with corrective feedback based on review of recorded sessions had greater competency in delivering core components of the prescribed intervention (Webster-Stratton et al. 2014). Descriptions of supervision in the context of graduate clinical training clinics largely providing cognitive-behavioral therapy have similarly highlighted the importance of experiential learning techniques, such as modeling and role-play, as well as observation of live or recorded therapy session in the acquisition of therapist skill and knowledge (Reiser and Milne 2013). Taken together, (a) focus on the principles of the intervention via specific practice elements, (b) corrective feedback based on live or recorded observation, and (c) experiential learning strategies (i.e., modeling and role-play) might be considered "evidence-based supervisory microskills" that enhance therapist competency in the delivery of the intended intervention.

While such rigorous investigation contributes to our knowledge of effective supervisory microskills, the generalizability of these findings into routine practice settings outside of controlled research studies is limited. One important contrast between supervision in the studies above and supervision that occurs within routine care settings is that supervision in effectiveness trials and experiments is often provided by highly knowledgeable experts who are invested in the effective implementation of an evidence-based treatment (Nadeem et al. 2013). In addition, community-based supervisors must contend with an array of competing demands within the scope of supervision, including billing, productivity, case management, and other administrative tasks in addition to clinical content which may make it difficult to allocate time to microskills in ways accomplished in research trials (Dorsey et al. 2017).

Observational research that characterizes the microskills of routine supervision can contribute complementary knowledge to the evidence from experiments and effectiveness trials. A clearer definition of routine supervision ("supervision as usual") would highlight the overlaps and discrepancies with supervision utilized in research trials and provide important context for considering the generalizability of treatment research trials with clearly specified supervision models (Schoenwald et al. 2013). A better understanding of supervision as usual might also inform efforts to influence community-based mental health care, one of the primary contexts providing services to at-risk youth (Costello et al. 2014). Since supervision as usual theoretically offers supportive oversight of treatment as usual, its study may present targets for quality assurance or improvement. Additionally, mental health trainees across disciplines receive practicum or internship training including supervision in these settings (Accurso et al. 2011), so the content of supervision as usual might have relevance to the development of trainee competencies.

We know of only two published research studies that have characterized supervision as usual for youth mental health services. In one study, self-report data from 12 supervisor/supervisee dyads treating youth with disruptive behavior disorders in community-based mental health clinics indicated that supervision consisted largely of case conceptualization and discussion of therapy interventions, and that coverage of evidence-based practice elements was "brief" (Accurso et al. 2011). Accurso et al. (2011) also reported that supervisor live observation of therapy sessions occurred in 1.5% of sessions and use of videotape (12.2%) and audiotape (0.8%) was also relatively rare. In a cross-sectional study using self-report data from 56 supervisors trained in trauma-focused CBT and 207 clinicians from community mental health

clinics, participants similarly reported that supervision consisted largely of clinical content such as case conceptualization and discussion of therapeutic interventions with less time spent on non-clinical strategies like administrative tasks (Dorsey et al. 2017). Both studies characterized the format of supervision as usual as weekly, individual sessions lasting one hour on average (Accurso et al. 2011; Dorsey et al. 2017). The limited research on supervision as usual to date relies exclusively on self-report data.

Observational coding is considered the gold standard in treatment integrity research because it provides objective and highly specific information about clinician behavior in the session (Hogue et al. 1996; McLeod et al. 2013). Self-report is subject to potential cognitive biases (Accurso et al. 2011), which may be minimized with the use of observational coding methods. Numerous rigorous investigations of treatment have utilized observational coding systems to characterize components and integrity of therapeutic practice (e.g., Therapy Process Observational Coding System for Child Psychotherapy-Strategies scale; McLeod 2001; Therapist Integrity in Evidence Based Interventions coding system; Weisz et al. 2017). Similar efforts in supervision research using this methodology are an important next step in identifying strategies used in routine care supervision that may be targeted and leveraged to support competent delivery of effective psychosocial practices.

The current study examined supervision as usual provided to child-serving therapists. The primary goal was to describe the format (e.g., frequency, length, modality) and the supervisor-enacted microskills of supervision as usual for youth mental health services. In particular, we sought to characterize the use of evidence-based supervisory microskills, as well as other microskills particularly relevant to supervision as usual. This study sought to address one of the methodological flaws noted in the supervision literature (i.e., reliance on self-report data; Wheeler and Richards 2007) by utilizing observational coding to characterize the microskills of supervision as usual. A secondary goal was to determine if supervisor characteristics (e.g., professional degree, therapeutic orientation, attitudes towards evidence-based practices), as well as setting characteristics (i.e., public versus private agency) were related to use of evidence-based supervisory microskills.

Method

Participants

Dyads/Triads

Existing supervisor-supervisee dyads or triads enrolled in the study together. There were 19 (95.0%) dyads comprised of one supervisor and one supervisee. There was one (5.0%) triad comprised of one supervisor and two supervisees. Supervisees in the triad completed their own set of baseline and weekly assessment measures, and five audio recordings of supervision sessions were collected with the triad participating together. Therefore, the triad was treated as two dyads for the purposes of self-report data analysis and as a single triadic unit for the purposes of observational coding analysis.

Supervisors

The sample included supervisors ($n = 13$) providing supervision to youth-serving therapists. The mean age of supervisors was 41 years ($SD = 9.3$) and 12 were female (92.3%). All supervisors reported that they were Caucasian (100.0%), and one supervisor (8.0%) also identified as Hispanic. Six (46.2%) of the supervisors had a master's degree in Marriage and Family Therapy/Counseling, four (30.8%) had a doctoral degree in Psychology, and three (23.1%) had a master's degree in Social Work. Supervisors reported an average of 6.7 years of graduate training after undergraduate coursework ($SD = 3.7$), and an average of 11.3 years of clinical experience post-training ($SD = 9.5$). On average, supervisors reported providing 3.2 h of individual supervision ($SD = 1.7$) and 0.9 h of group supervision on a weekly basis ($SD = 0.9$). Primary theoretical orientation included cognitive or cognitive-behavioral ($n = 5$, 38.5%), other/integrated ($n = 4$, 30.8%), family systems ($n = 3$, 23.1%), and psychodynamic ($n = 1$, 7.7%). Characteristics of participants are described in Table 1.

Supervisees

The sample included 20 supervisees who responded to recruitment that sought child-serving therapists. Participants were largely female (95.0%), Caucasian (85.0%), and state licensed in their professional discipline (85.0%) (refer to Table 1). The mean age of supervisees was 29.5 years ($SD = 4.7$), and most supervisees (90.0%) were primarily child-adolescent therapists. Supervisees reported an average caseload of 12.7 ($SD = 6.4$) clients per week, and an average of 1.5 years of experience beyond graduate training ($SD = 1.5$). They reported receiving an average of 1.0 h of individual supervision on a weekly basis ($SD = 0.5$), and an average of 0.7 h of weekly group supervision ($SD = 0.8$). Primary theoretical orientation included cognitive, behavioral, or cognitive-behavioral ($n = 8$, 40.0%), family systems ($n = 6$, 30.0%), other/integrated ($n = 5$, 25.0%), and psychodynamic ($n = 1$, 5.0%).

Table 1 Supervisor and supervisee characteristics

Characteristics	Supervisor ($n=13$) *M* (*SD*) [range]	Supervisee ($n=20$) *M* (*SD*) [range]
Age	41.4 (9.3)	29.5 (4.7)
Years of clinical experience	11.6 (9.5) [3, 40]	1.5 (1.5) [0, 3]
Weekly hours providing/receiving[a] individual supervision	3.2 (1.7)	1.0 (0.5)
	N (%)	*N* (%)
Female	12 (92.3)	19 (95.0)
Race/ethnicity		
Caucasian	13 (100.0)	17 (85.0)
Hispanic/Latino	0 (0.0)	1 (5.0)
Asian	0 (0.0)	1 (5.0)
Other	0 (0.0)	1 (5.0)
Professional degree		
MFC/MFT/LPC	6 (46.2)	10 (50.0)
MSW	3 (23.1)	5 (25.0)
PhD/PsyD	4 (30.8)	4 (20.0)
RN	0 (0.0)	1 (5.0)
Theoretical orientation		
Psychodynamic	1 (7.7)	1 (5.0)
Behavioral or cognitive-behavioral	5 (38.5)	8 (40.0)
Family systems	3 (23.1)	6 (30.0)
Other/integrated	4 (30.8)	5 (25.0)
State licensed	13 (100.0)	17 (85.0)
Therapeutic focus		
Primarily child-adolescent		18 (90.0)
Combination of child/adult		2 (10.0)
Setting type		
Public agency		9 (45.0)
Private agency		11 (55.0)

[a]Data were collected on the number of hours that supervisors provide supervision and the number of hours that supervisees receive supervision

Procedures

All procedures were approved by the University of Texas at Austin Institutional Review Board. This study examined supervision in community-based outpatient child mental health in Central Texas using observational coding of recorded supervision sessions and self-report surveys from supervisors and supervisees. Recruitment efforts sought pre-existing supervisory dyads/triads within the community, with both supervisors and supervisees interested in participation. Recruitment took place via direct visits and presentations at two community-mental health clinics which resulted in the enrollment of nine dyads (six supervisors and none supervisees). These nine dyads were employees and trainees at not-for-profit community mental health agencies subsidized by public and private entities that offer a sliding scale fee. Supervisees in these settings received supervision for free as a part of their training within the public agency. Additional recruitment took place via emails to area therapist listservs and local graduate program alumni listserves (e.g., social work, counseling). These online recruitment procedures produced 21 potential dyads (both supervisors and supervisees), and ultimately resulted in the enrollment of 11 dyads (8 supervisors and 11 supervisees). Those that did not result in enrollment did not meet enrollment criteria (e.g., having no supervisees at the time of recruitment, having caseloads of mostly adult clients). The 11 enrolled dyads worked in private practice settings and did not accept insurance or other third-party payment. These supervisees sought out their supervisors from the community and paid out of pocket for their supervision. Because our recruited sample represented two distinct settings (i.e., public versus private agencies), we compared microskill use in the two setting types. Informed consent was obtained from all individual participants included in the study.

Data collection occurred over five consecutive supervision sessions per dyad/triad. Dyads/triad recorded their supervision sessions ($n=5$) from start to finish using audio

recorders provided by the research team. Participants received emails immediately following each scheduled supervision meeting with links to complete self-report surveys via Qualtrics, a secure, web-based survey program. Data (audio recordings and surveys) were collected for 100 total supervision sessions. A subset of audio recorded sessions (57%) was randomly selected for observational coding.

Measures

Therapist Background Questionnaire

This 22-item self-report measure collects information on the participant's age, gender, ethnicity, education, professional discipline (e.g., counseling, social work, psychology), professional degree (i.e., master's, doctoral), as well as clinical experience, including typical caseload and theoretical orientation (e.g., behavioral/cognitive-behavioral, family systems, psychodynamic).

Evidence-Based Practice Attitudes Scale-50 Item (EBPAS-50)

This self-report measure assesses mental health provider attitudes towards adopting evidence-based practices (Aarons et al. 2012). It consists of 50 items measured on a 5-point Likert scale ranging from 0 (*Not at all*) to 4 (*To a very great extent*). The extent to which they agree with statements with higher scores indicates more favorable attitudes (23 items are reverse coded). It comprises 12 subscales: appeal, requirements, openness, divergence, limitations, fit, monitoring, balance, burden, job security, organizational support, and feedback, and includes a total score on overall attitudes. The subscales have demonstrated acceptable to excellent internal consistency in a sample of community-based providers ($.70 < \alpha < .92$; Aarons et al. 2012). In the current study, internal consistency ($.67 \leq \alpha \leq .74$) was acceptable across all subscales.

Supervision Process Questionnaire (SPQ)

This self-report measure prompts the respondent to answer questions about their most recent supervision session (Accurso et al. 2011). The measure assesses (a) total duration of the supervision session, (b) session format (e.g., in person, live during therapy, individual), (c) session data source (i.e., progress notes, videotape, audiotape, therapy checklist), and (d) potential supervision functions (e.g., crisis management issues, therapy interventions/approaches, administrative tasks). Respondents indicate the number of minutes devoted to each function and their satisfaction devoted to each function (i.e., "too little," "about right," or "too much"). The questionnaire was expanded in the current study to assess the following information about the clients that were discussed in supervision: number of clients and primary concerns of the client(s) (i.e., depression, anxiety, disruptive conduct, trauma, substance abuse, relationship problems, family conflict). For the current analyses, total duration of session, session format, session data source, and client information are reported to address our research aims (i.e., characterize the format and microskills of supervision as usual).

Supervision Integrity to Evidence-Based Interventions Coding System (SIEBI)

Supervision integrity, including supervisor use and competence in delivering supervisory microskills, was characterized using the SIEBI (Bearman et al. 2015). The SIEBI includes 31 items that describe microskills proposed to occur during supervision. These items were developed and selected based on review of the literature on supervision, self-report measures of supervision, observational coding measures from therapy (i.e., Therapist Integrity in Evidence Based Interventions; Bearman et al. 2017; Weisz et al. 2017; Therapy Process Observational Coding System for Child Psychotherapy-Alliance scale; McLeod and Weisz 2005), and review of recorded supervision sessions from the sample. The coding items include four evidence-based supervisory microskills including: reference to specific evidence-based practice element, corrective feedback, modeling, and role-play as well as 27 other microskills (e.g., administrative tasks, case management, praise, professional ethics, self-disclosure, setting agenda; see Table 3 for all microskills). Supervision recordings are coded in 5 min increments to indicate any occurrence of a microskill, the percent of time allotted to each microskill (based on the percentage of 5 min segments in which microskills are present), and globally to indicate competency delivering each microskill that occurred in the session (i.e., skillfulness of delivery, rated as 1 [*superficial or incomplete*], 2 [*adequate but not optimal*], 3 [*sufficient*], and 4 [*expert*]). SIEBI coders ($N = 2$) were graduate students who were the second and third authors of the coding system.

Coding training consisted of two steps. First, coders jointly coded four sessions alongside the first author of the coding system and discussed the codes. Second, coders coded thirteen sessions independently, and reliability was assessed against one another. Coders demonstrated mean item agreement for both frequency and competency that was above the threshold for "good" reliability (ICC [2,2,] > .59), according to the standards recommended by Cicchetti and Sparrow (1990). Next, three sessions per dyad and triad were randomly selected for coding ($n = 57$), and both raters coded each session. Average reliability for the randomly selected sample of 57 sessions was in the excellent range

for frequency, *M* ICC [2, 2] = .89 (range .71–1.00) and competency, *M* ICC [2, 2] = .89 (range .73–1.00) of microskills. The final coding data analyzed was an average of scores between the two raters.

Data Analysis Plan

All study analyses were calculated with SPSS Statistics (version 23). Descriptive analyses were conducted to characterize the format and microskills indicated in self-report and observational coding data. Follow-up analyses examined supervisor characteristics associated with delivery of evidence-based supervisory microskills.

Results

Format of Supervision as Usual

Supervisee self-report was used to describe the format of supervision meetings (Table 2). Reports from 100 meetings indicated that supervision sessions occurred twice a week to every 2 weeks and ranged in duration from 43 to 90 min, with a mean of 59.7 min (*SD* = 7.9). Most sessions occurred in person (98.0%) as one-on-one meetings (96.0%) and 4.0% were considered group meetings with more than two supervisees present in the session. Forty-two percent of sessions included the use of progress notes to determine therapy session content, 11.0% included skill or therapy checklists, and 2.0% included use of a recording from therapy (audio-tape or videotape). The number of clients discussed per session ranged from 0 to 12, with a mean of 3.6 clients (*SD* = 2.2) discussed per supervision session. Supervisees reported the primary concerns of all clients discussed in supervision; supervisees could select more than one primary concern to reflect multiple clients discussed per supervision session. Across 100 sessions, 75 included discussion of clients with a primary concern of family conflict, 65 with a primary concern of anxiety, 56 with a primary concern of trauma, 44 with a primary concern of depression, 41 with a primary concern of relationship problems, 40 with a primary concern of disruptive conduct, and 7 with a primary concern of substance abuse.

Table 2 Format of supervision as usual

Variable	*M* (Range)	*SD*
Length of session (minutes)	59.7 (43–90)	7.9
Number of clients discussed	3.6 (0–12)	2.2
	N = *100*	
Method of supervision provided		
In person	97	
Telephone	3	
Live (during therapy)	0	
Type of supervision provided		
Individual	96	
Group	4	
Data used in supervision		
No data used	56	
Progress notes	43	
Skill or therapy checklist	3	
Videotape	1	
Audio-tape	1	
Primary concerns of clients[a]		
Family conflict	75	
Anxiety	65	
Trauma	56	
Depression	44	
Relationship problems	41	
Disruptive conduct	40	
Substance abuse	7	
Other	17	

[a]Respondents may select more than one primary concern of clients discussed per session

Supervisory Microskills

Observational Coding

Table 3 reports the number and percentage of sessions that included each microskill, the average percent of session time allotted to each microskill (based on the percentage of 5 min segments in which microskill was present), and average competency with which the microskills that occurred in session were delivered according to observational coding reports.

The supervisor-enacted microskills that occurred most frequently across coded sessions included: administrative tasks (present in 91.2% of sessions), praise (89.5%), expression of empathy (87.7%), supervisor self-disclosure (80.7%), collaboration with supervisee (80.7%), case conceptualization (80.7%), and recommending a therapeutic practice element (78.9%). The following microskills occurred in less than 10% of coded sessions: setting an agenda (8.8%), discussing influences of multicultural differences (8.8%), corrective feedback (7.0%), addressing crises (7.0%), requesting supervisee self-assessment of practice (5.3%), criticizing supervisee (3.5%), role-play (1.8%), and using evidence-based guides for clinical decision-making (0.0%).

The microskills with the greatest average time allotted in coded sessions included: praise (27.0%), recommending a therapeutic practice element (26.1%), administrative tasks (22.3%), referencing specific evidence-based practice

Table 3 Frequency, time allotted, and competence of microskills from observational coding data

Microskill	Frequency[a] *N* (%)	Time allotted[b] *M* (*SD*)	Competence[c] *M* (*SD*)
Administrative tasks	52 (91.2)	22.3 (16.6)	2.0 (1.0)
Praise	51 (89.5)	27.0 (17.7)	2.4 (1.0)
Empathy	50 (87.7)	15.9 (14.4)	1.8 (1.3)
Self disclosure	46 (80.7)	19.1 (15.8)	2.1 (1.0)
Collaboration	46 (80.7)	17.1 (18.3)	1.9 (1.0)
Case conceptualization	46 (80.7)	14.0 (12.3)	1.6 (0.9)
Recommended practice element	45 (78.9)	26.1 (21.0)	2.3 (1.1)
Professional development	42 (73.7)	14.2 (19.7)	1.7 (1.2)
Modeling	40 (70.2)	13.5 (14.6)	1.5 (1.0)
EB practice elements	39 (68.4)	20.2 (24.2)	1.7 (1.2)
Case management	34 (59.6)	9.5 (12.5)	1.4 (1.0)
Acknowledges competency	28 (49.1)	4.3 (5.9)	1.1 (0.7)
Professional ethics	27 (47.4)	6.7 (10.2)	1.6 (0.8)
Teaching theory	25 (43.9)	5.4 (8.7)	1.3 (0.7)
Supervisee wellbeing	24 (42.1)	4.7 (7.9)	1.6 (1.3)
Countertransference	17 (29.8)	3.2 (6.3)	1.8 (0.8)
Relationship factors	16 (28.1)	2.7 (4.9)	1.2 (0.7)
Problem solving barriers	14 (24.6)	2.7 (6.3)	1.5 (0.9)
Personalization of practice element	13 (22.8)	2.6 (5.5)	1.5 (0.9)
Strategy specificity	11 (19.3)	1.3 (3.2)	1.2 (0.4)
Follow up	9 (15.8)	1.8 (4.5)	1.3 (0.7)
Client data	7 (12.3)	1.3 (3.9)	1.1 (0.5)
Homework	7 (12.3)	1.2 (3.5)	1.8 (0.9)
Multicultural	5 (8.8)	0.9 (3.2)	1.3 (0.7)
Set agenda	5 (8.8)	0.8 (2.8)	1.1 (0.5)
Corrective feedback	4 (7.0)	0.9 (4.7)	1.5 (1.4)
Addressing crises	4 (7.0)	0.8 (3.1)	1.3 (0.5)
Self-assessment	3 (5.3)	0.5 (2.3)	1.5 (0.5)
Criticism	2 (3.5)	0.3 (1.7)	1.0 (0.0)
Role-play	1 (1.8)	0.3 (2.5)	4.0 (0.0)
EB clinical decision making	0 (0.0)	0.0 (0.0)	0.0 (0.0)

[a]Sessions that included microskill

[b]Percentage of session time allotted to microskill

[c]Rated on a 1–4 scale

elements (20.2%), supervisor self-disclosure (19.1%), collaboration with supervisee (17.1%), expression of empathy (15.9%), discussing supervisee's professional development (14.2%), case conceptualization (14.0%) and modeling (13.5%). The following microskills were allotted less than one percent of session time on average in the coded sample: corrective feedback (0.9%), discussing influences of multicultural differences (0.9%), setting an agenda (0.8%), addressing crises (0.8%), prompting supervisee self-assessment (0.5%), role-play (0.3%), criticizing supervisee (0.3%), and using evidence-based guides for clinical decision-making (0.0%).

The average competency with which all microskills were delivered was 1.6 ($SD = 1.6$), indicating competency between "incomplete" and "adequate but not optimal." There were five microskills that had average competency ratings between "adequate but not optimal" and "sufficient": praise ($M = 2.4$, $SD = 1.0$), recommending a therapeutic practice element ($M = 2.3$, $SD = 1.1$), supervisor self-disclosure ($M = 2.1$, $SD = 1.0$), and administrative tasks ($M = 2.0$, $SD = 1.0$). Role-play was the only microskill with "expert" competency ($M = 4.0$, $SD = 0.0$); however, role-playing occurred in only one session across the coded sample. The remaining microskills that occurred in the sample were rated with competency between "incomplete" and "adequate but not optimal" (see Table 3).

Sample Characteristics and Supervisory Microskills

Independent sample t-tests and Chi square tests of independence were used to determine whether the frequency, percent time allotted in session, and competence of evidence-based supervisory microskills differed when comparing supervisors by professional degree (master's level professionals versus doctoral level psychologists), therapeutic orientation, and setting (i.e., public versus private agency). In order to reduce the likelihood of Type I error, alpha was set at $p < .01$ for all significance tests. There were no significant differences between doctoral level psychologists and master's level counselors/social workers in the frequency with which they delivered evidence-based microskills (i.e., reference to evidence-based practice elements, corrective feedback, modeling, role-play), or the time allotted to evidence-based microskills. In terms of the competency, or skillfulness in the delivery of these microskills, the competency with which live modeling was delivered was significantly different between doctoral level psychologists ($M = 2.3$, $SD = 1.2$) and master's level therapists ($M = 1.2$, $SD = 0.6$), $t(37) = -3.1$, $p = .008$, $d = 1.0$. Effect sizes of non-significant results ranged from 0.1 to 0.7 when comparing doctoral level psychologists and master's level counselors/social workers.

There were no significant differences in the frequency of evidence-based supervisory microskills, time allotted to evidence-based supervisory microskills, or competence in the delivery of evidence-based microskills between supervisors that identified as cognitive or cognitive-behavioral in orientation (38.5%) and those that indicated any other therapeutic orientation, which included psychodynamic, family systems, or an eclectic orientation (61.5%; effect sizes ranged from 0.1 to 0.6).

When comparing setting type, supervisory dyads in public agencies referenced evidence-based practice elements significantly more frequently than dyads in private service settings, ($X^2(1) = 9.9$, $p = .002$, $\phi = 0.4$). Dyads in public agencies ($M = 34.3$, $SD = 26.7$) also allotted significantly more time in session referencing evidence-based practice elements than did dyads in private service settings ($M = 7.1$, $SD = 12.2$), $t(55) = 4.8$, $p = .000$, $d = 0.6$. Supervisory dyads in public agencies ($M = 2.2$, $SD = 1.2$) also referenced evidence-based practice elements with significantly greater competency than dyads in private service settings ($M = 1.0$, $SD = 0.7$), $t(37) = 3.8$, $p = .001$, $d = 0.6$. In addition, dyads in public agencies ($M = 19.6$, $SD = 17.0$) allotted significantly more time in session to modeling than did those in private service settings ($M = 8.5$, $SD = 9.8$), $t(55) = 3.0$, $p = .003$, $d = 0.7$. Similarly, dyads in public agencies ($M = 1.9$, $SD = 1.1$) delivered modeling with significantly greater competency than dyads in private service settings ($M = 1.1$, $SD = 0.5$), $t(37) = 3.2$, $p = .004$, $d = 1.0$. There were no other significant differences in the frequency, time allotted, and competency in the delivery of evidence-based supervisory microskills between settings (non-significant effect sizes ranged from 0.1 to 0.3).

Correlations between overall attitudes towards evidence-based practice, measured by the EBPAS-50, and both the frequency of, and time allotted to evidence-based supervisory microskill usage (i.e., reference to evidence-based practice elements, corrective feedback, modeling, role-play) indicated non-significant relationships.

Discussion

This study contributes to the small but growing evidence base on supervision practices within routine care settings for child mental health services. The study sought to describe the format and microskills of supervision provided to child-serving therapists, and to characterize the extent to which these practices align with supervisory practices in treatment effectiveness trials and experiments that have been shown to improve therapist adherence, competence, and client outcomes. A secondary goal of the study was to determine if supervisor and setting characteristics were related to use of evidence-based supervisory microskills (e.g., reference to evidence-based practice elements, corrective feedback based on observation, modeling, and role-play). Lastly, this study sought to address one of the methodological limitations of the supervision literature to date: the reliance on self-report data (Watkins 2011; Wheeler and Richards 2007). The current study used a newly-developed observational coding system to provide an objective characterization of supervision as usual.

Consistent with results from Accurso et al. (2011) and Dorsey et al. (2017), the format of these meetings was described as in-person, individual, hour-long sessions. Out of 100 sessions for which data was collected, only two sessions included a recorded therapy session as a data source for evaluating session content or supervisee competence. Our results support characterizations of supervision within routine care as reliant on verbal discussion of case progress rather than observation of therapy sessions (e.g., Accurso et al. 2011).

Observational coding data indicated that evidence-based supervisory microskills were delivered variably in supervision as usual. Reference to evidence-based practice elements occurred in 68.4% of coded sessions, modeling occurred in 70.2%, corrective feedback occurred in 7.0%, and role-play occurred in 1.8% of sessions. In an average supervision meeting in this sample, reference to evidence-based practice elements accounted for 20.2% of session time and modeling accounted for 13.5% of session time, while corrective feedback and role-play accounted for less

time in session (0.9 and 0.3% of session time respectively). These results may be compared to an analogue study of supervisory microskills that used observational coding to characterize supervision that resulted in increased therapist competence (Bearman et al. 2017). In the supervision condition that resulted in increases in therapist competence with an evidence-based practice element (cognitive restructuring), evidence-based supervisory microskills occurred in all sessions, and modeling accounted for 63.4% of session time, role-play accounted for 39.4% of session time, and corrective feedback accounted for 74.5% of session time.

In addition to the variable occurrence of these evidence-based supervisory microskills, the competency with which they were delivered was rated as suboptimal in the current sample. Supervision as usual also included microskills largely unnoted in research trials: administrative tasks occurred in 91.2% of sessions (22.3% of session time allotted on average) and case conceptualization in 80.7% of sessions (14.0% time allotted), as well as microskills that focus on the emotional support of the supervisee such as praise in 89.5% of sessions (27.0% time allotted), expression of empathy in 87.7% of sessions (15.9% time allotted), supervisor self-disclosure in 80.7% of sessions (19.1% time allotted), and collaboration in 80.7% of sessions (17.1% time allotted).

These findings suggest a divergence in supervisory microskills utilized in supervision as usual from those shown to enhance therapist adherence and competency in research trials, both with regard to how often these microskills are utilized in supervision meetings and the relative time allocated to them in a given meeting. The evidence-based supervisory microskills examined in this study have been shown to enhance therapist adherence and competency in the delivery of evidence-based treatments (see Bearman et al. 2013, 2017; Martino et al. 2016; Schoenwald et al. 2009; Stice et al. 2013; Webster-Stratton et al. 2014) and perhaps the lack of frequent or competent reference to evidence-based practice elements, corrective feedback based on observation of live or recorded therapy sessions, and experiential learning strategies has an impact on the development of supervisees serving children in routine care settings. This provides some possible context for studies showing that youth treated in routine care settings do not often receive evidence-based treatments delivered with integrity (Borntrager et al. 2013; Garland et al. 2010) and that implementation efforts that forego the supervision models used to establish efficacy/effectiveness of evidence-based treatments may encounter challenges with regard to therapist behavior and client outcomes in usual care (Jensen-Doss et al. 2009; Smith and Jensen-Doss 2017).

Corrective feedback based on review of live or recorded therapy has been indicated to improve therapist competency in the delivery of evidence-based practices (Bearman et al. 2017; James et al. 2008). Corrective feedback allows for the "identification and remediation of suboptimal performance" (Roth and Pilling 2007, p. 23) and is considered a key feature of supervision (Milne 2009). Identifying inadequate competencies in the delivery of psychotherapy is more difficult when relying solely on case discussion. Usual care research has found that therapists over-report their use of therapeutic strategies when compared to observer reports (Hurlburt et al. 2010). In the current study, only 2% of supervision sessions utilized a recording of the therapy session for supervision. Without recorded or live observation of therapy practice, there were limited opportunities for supervisors to identify suboptimal performance, and thus deliver behaviorally anchored feedback (Falender et al. 2014). Reliance on case discussion in the current sample may be problematic for effective scaffolding to increase therapist competency in therapeutic practice.

Discussion or recommendation of therapy interventions, as well as reference to evidence-based practice elements were two of the most frequently coded microskills in supervision as usual according to our coding system. These data support findings that discussion of practices is the primary method for addressing therapy practice implementation (Accurso et al. 2011; Dorsey et al. 2017). Two studies using different methodologies have found that discussion of interventions alone does not predict competent use of evidence-based strategies in therapy following supervision (Bearman et al. 2013, 2017).

More optimal recommendations for therapeutic practice elements in supervision may have included the use of modeling and role-play. Modeling enacted by the supervisor and role-play with the supervisee have been shown to enhance therapist procedural knowledge (Bennett-Levy 2006), increase therapist competency (Bearman et al. 2017), and predict evidence-based practice use in therapy (Bearman et al. 2013). The current study indicated that role-play was almost never used in supervision as usual; while modeling occurred more frequently, the average competency rating suggested that the dosage was insufficient. Such low dosage practice of modeling to teach psychotherapeutic skills may limit its impact on future therapist behavior in therapy and therapist clinical competency.

Case conceptualization occurred in 80.7% of supervision as usual sessions and accounted for an average of 14.0% of session time in the current study, in line with the studies by Accurso et al. (2011) and Dorsey et al. (2017) wherein supervisors and supervisees self-reported that case conceptualization accounted for much of total supervision time. In the current study, observational coding indicated that case conceptualization was delivered with insufficient competency on average. These findings have particular relevance for the delivery of evidence-based treatments, as case conceptualization has been identified as a necessary competency

for the implementation of cognitive-behavioral therapy (Dorsey et al. 2017). Therefore, insufficiently competent case conceptualization within the context of supervision as usual may be a barrier to competent delivery of evidence-based psychotherapeutic practices in routine care settings, regardless of its frequency.

Another microskill that differed in use between supervision as usual and treatment research trials in the current study was administrative tasks. Although some have suggested that discussion of administrative tasks is a primary component of supervision (i.e., paperwork; Carroll and Rounsaville 2007); Accurso et al. (2011) and Dorsey et al. (2017) reported that limited time was devoted to administrative tasks in supervision as usual. Observational coding in the current study indicated that discussion of administrative tasks was one of the most frequently coded microskills (occurring in 91.2% of sessions and accounting for 22.0% of session time). Administrative tasks appear to be an integral component of supervision as usual in the current study, and may support effective and safe clinical practice. For instance, administrative tasks may develop therapist competency in the process of informed consent, or may develop therapist professionalism in the work environment with the timely completion of progress notes—skills with less relevance in a treatment research trial. These findings can inform targeted quality improvement efforts by allotting opportunities within the scope of evidence-based supervisory practice for administrative tasks that develop supervisee competency in skills unique to routine care settings. Alternatively, Dorsey et al. (2017) suggest that in order to meet the wide range of supervision functions, organizations may consider allotting administrative tasks to non-clinical supervisors or staff meetings to reserve supervision time to evidence-based functions.

Results indicated that the frequency with which evidence-based supervisory microskills were used did not differ when comparing supervisors in terms of professional degree and therapeutic orientation, nor were evidence-based supervision microskills related to supervisor attitudes towards evidence-based practices. These findings are consistent with some studies that found that therapist characteristics (e.g., professional degree, training level, therapeutic orientation, and attitudes) do not predict use of evidence-based practices in therapy (Bearman et al. 2013) or client outcomes (Michael et al. 2005). The only significant finding in the current study related to therapist characteristics was that doctoral level supervisors delivered live modeling with greater competency than their master's level colleagues. In one effectiveness trial, live modeling of therapy strategies was the only predictor of adherence to therapeutic practices utilized in the next therapy session after supervision (Bearman et al. 2013). Results also indicated that setting type, whether public or private agency, was related to differences in the use of certain evidence-based supervisory microskills. In particular, reference to evidence-based practice elements occurred in more sessions, accounted for more session time on average, and was delivered with greater competency in public service settings than private practice. Additionally, public agency dyads allotted for more time in session to modeling and provided this microskill with greater competency. These findings are consistent with research in which clinicians in private service settings reported infrequent use of the evidence base to inform treatment decisions (Stewart and Chambless 2007). Furthermore, findings may suggest that efforts undertaken by the state of Texas in the early 2000's to increase the use of empirically supported interventions in public service settings for youth (see, Jensen-Doss et al. 2009; Painter 2009) have had some impact on increasing familiarity with evidence-based practices, permeating the practices of supervision.

Limitations

This study attempted to extend the small existing literature on supervision as usual, and to complement prior efforts by using a newly-developed observational coding system to address the concern that supervision research relies primarily on self-report (Watkins 2011; Wheeler and Richards 2007). Whereas prior studies have focused on supervision with a particular diagnostic population (Accurso et al. 2011) or a particular population and an evidence-based treatment (Dorsey et al. 2017), the current study attempted to examine supervision as usual more broadly and reflects the multiple diagnoses that make up a typical clinician caseload. Finally, the use of multiple supervision sessions per supervisory dyad or triad, versus the use of only one session used in prior research, is also a strength of the current study.

Nonetheless, some important limitations should be acknowledged. The observational coding system used is novel, and has not been examined with regard to underlying factor structure. The small sample size of the current study prohibits a factor analysis, which would increase confidence that the coding system represents distinct constructs. Future research should use a larger sample in order to provide further psychometric validation. Other studies of supervision have also used novel measures to characterize supervision format and function and have used inter-rater reliability as the primary measure of psychometric validation (Accurso et al. 2011; Dorsey et al. 2017), as have many observational coding systems for psychotherapy process (see Garland et al. 2010, 2014; Weisz et al. 2012, 2017). In the current study, interrater reliability between two raters who independently coded sessions was in the excellent range, exceeding the more moderate agreement between supervisors and supervisees on self-report measures in prior studies (Accurso et al. 2011; Dorsey et al. 2017).

This study was limited to characterizing supervisor/supervisee interactions in the context of structured supervision sessions. It is possible that there were less structured, "on the fly" interactions that occurred outside of regular supervision time that we were unable to capture. In particular, acute client crises may have resulted in impromptu communication that would not be captured by our coding system. In addition, this study did not examine supervisee behavior in session with clients, and therefore cannot determine the impact of supervision on actual therapeutic competence or other therapist behaviors. In addition, we did not collect client data to draw conclusions about the ways that supervision impacts client outcomes. However, our approach aligns with treatment as usual research that has pursued rigorous characterizations of usual care to compare to treatment in research trials as a potential quality indicator without any relation to client outcomes (see Garland et al. 2010; Smith et al. 2017). Future research that links supervisory practice to therapist behaviors and client outcomes within routine practice is needed. Such data may uncover the components of supervisory practice that are relevant for various settings, training levels of the supervisee, and presenting problems of the client.

Though the sample is fairly small, participants represent a range of mental health degrees, clinical experiences, and therapeutic orientations. Participating supervisors and supervisees were mostly female, Caucasian, and master's level therapist—characteristics that are representative of clinicians working in community mental health services (Glisson et al. 2008). It is possible that the small sample size contributed to non-significant findings in analyses examining sample characteristics and use of evidence-based supervisory microskills. Medium effect sizes were indicated for some non-significant t-tests (i.e., time allotted to reference to evidence-based practice elements, modeling, corrective feedback, and competency of reference to evidence-based practice elements when comparing professional degree type; time allotted to reference to evidence-based practice elements and modeling, and competency of modeling when comparing theoretical orientation), suggesting that significant differences may have been detected with a larger sample and should be pursued in future research.

Conclusion

This study is the first to use observational coding to characterize the microskills of supervision for routine youth mental health services. As both researchers and professional licensing bodies (e.g., American Psychological Association) acknowledge supervision's training potential, there is greater need to dismantle and evaluate the effective components of this practice. The current study sought to determine the extent to which supervisors utilize evidence-based supervisory microskills, and deduce other relevant components of supervision unique to routine care settings. Findings highlight potential barriers to effective psychotherapeutic practice, including inadequate coverage of evidence-based practice elements, a lack of review of live or recorded therapy and corrective feedback, and the limited use of experiential learning strategies (modeling and role-play). Findings also indicate that there are unique microskills used in supervision as usual, such as administrative tasks, that may be critical in the regulation of safe and professional clinical practice in the real world.

These results direct attention to potential missed opportunities to impart knowledge and skill in developing or newly minted therapists serving children. These findings also have implications for training and policy of supervisory practice. Just as large-scale dissemination efforts for evidence-based mental health interventions supported by state-level and other regulating bodies have increased the available training opportunities and supports for treatment found to be effective (see, Hoagwood et al. 2014), similar efforts may follow for evidence-based supervision in the United States. Such practices would mirror regulatory policies for training and accrediting supervisors in other countries like Australia (see, Psychology Board of Australia 2010). Training supervisors in the strategies found to support evidence-based practices in treatment research trials may influence supervisee practice. Requirements for supervisory practice may also make the expectations for effective supervision more transparent to supervisees, fostering greater accountability for supervisors to use evidence-based supervisory microskills. Such quality improvement efforts within routine care settings may benefit supervisees and the children and families that they serve.

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Compliance with Ethical Standards

Conflict of interest Abby Bailin, Sarah Kate Bearman, and Rafaella Sale declares that they no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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