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The Core Curriculum on Childhood Trauma: A Tool for Training a Trauma-Informed Workforce

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Recognition of the nationwide high prevalence of psychological trauma in children and adolescents, combined with increasing awareness of the far-reaching adverse consequences of childhood trauma, have led to calls to develop a trauma-informed mental health workforce. We describe the initial pilot test of the *Core Concepts* portion of the *Core Curriculum on Childhood Trauma*, as conducted in a large graduate school of social work. The Core Curriculum uses detailed case vignettes of trauma-exposed youth and families, combined with problem-based learning methods, to promote two primary learning aims: (a) to enhance the development of foundational trauma-related conceptual knowledge, and (b) to accelerate the acquisition of trauma-informed clinical reasoning and clinical judgment. Vignettes are presented in segments to simulate gathering, organizing, drawing meaning from, and making decisions based on information in professional practice. After each segment, the facilitator helps learners to summarize relevant facts, develop hunches and hypotheses, identify learning issues, and plan next steps. The Curriculum was very favorably received by students and was associated with marked increases in self-efficacy in applying the Core Concepts to work with trauma-exposed youth and families. We discuss ways in which the Curriculum can be used, especially as a foundation for training in specific evidence-based treatment protocols, to help prepare a national mental health workforce capable of implementing trauma-informed evidence-based practice.

Keywords: trauma, problem-based learning, clinical training, evidence-based practice, clinical reasoning

Despite society's efforts to protect children from harm, many young people undergo profoundly distressing life experiences that powerfully affect their development and functioning. Ample evidence documents that psychological trauma in child and adolescent populations nationwide is commonplace and not "outside the range of normal human experience." For example, a 10-year longitudinal study of a large representative youth sample revealed that 68% reported exposure to at least one traumatic event by age

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16, with many reporting multiple exposures (Copeland, Keeler, Angold, & Costello, 2007). Research and clinical practice have both contributed to advances in our understanding of an extensive range of trauma-related sequelae, including neurobiological impacts (Gunnar & Quevedo, 2007; Watts-English, Fortson, Gibler, Hooper, & De Bellis, 2006), anxiety and dissociation (Aydin, Altindag, & Ozkan, 2009), depression and aggression (Becker-Blease, Turner, & Finkelhor, 2010), health problems and mortality (Dube, Felitti, Dong, Giles, & Anda, 2003), posttraumatic stress disorder (Koenen, 2010), and functional impairment in cognition, affect regulation, and social relationships (DePrince, Weinzierl, & Combs, 2009). This accumulating evidence has evoked a strong commitment to prevent and treat psychological trauma in childhood and adolescence from multiple child service sectors (Ko et al., 2008). Expressions of this commitment include responses from government, public health, and social service agencies, such as Federal funding since 2001 of the National Child Traumatic Stress Network (NCTSN; Pynoos et al., 2008), as well as calls across multiple health disciplines to train a trauma-informed national mental health workforce (Bussey, 2008; Cook et al., 2005; Cooper et al., 2008; McKenzie-Mohr, 2004).

Since the early 1980s, a large body of research on developmental psychopathology and childhood psychological trauma has highlighted the need for prevention and resilience-enhancing interventions to mitigate the impacts of traumatic experiences during childhood and adolescence (Cicchetti & Toth, 2009). Contemporaneously, important advances have been made in developing and disseminating evidence-based treatments (EBT's) that address the sequelae of trauma exposure within different populations (Silverman et al., 2008). This increased availability of trauma-focused treatments has raised the standard of care nationwide and filled in many gaps pursuant to providing a continuum of care for many different trauma-exposed groups (Ko et al., 2008). However, prominent trauma clinicians and researchers within multiple mental health disciplines have argued that the standard graduate clinical training curriculum does not generally provide sufficient training to prepare students to work therapeutically with children and adolescents with complex trauma-related symptom presentations whom they encounter in their field placements and in professional practice (Bussey, 2008; Courtois & Gold, 2009; O'Halloran & O'Halloran, 2001). A report by the American Psychological Association Division 56 Education/Training Committee Report (2007) indicated that opportunities for trauma training are becoming increasingly available in the psychology curriculum in the form of specialized tracks, externships, and internships, but may reflect the interests of one or more faculty members and are not generally embedded in the core curriculum in a manner that ensures continuity. Consequently, major demands are often placed on those who develop and/or disseminate trauma-focused EBT's to provide training in two major domains of professional knowledge. These include (a) training in specific procedures and skills for implementing EBT's with fidelity, and (b) coverage of basic or "core" concepts and principles of trauma theory and trauma-informed intervention that are *not specific* to that particular EBT, but instead form part of the general conceptual foundation of a broad range of psychological trauma-focused interventions (e.g., Hobfoll et al., 2006).

Graduate mental health training programs also face significant challenges as they seek to respond to these calls by integrating psychological trauma-specific education into existing curricula. Typically, graduate programs seek to design and deliver a curriculum that provides adequate breadth of scope, develops substantial depth of knowledge and expertise, and prepares graduates for the vast range of tasks and challenges they are likely to encounter as they serve a broad range of clients. In such "generalist" programs, students often have access to some degree of specialization (including in trauma theory and practice) through selective supervision, practicum and internship placements, and directed research. However, with so much content to cover, there is often little room in the core curriculum of most "generalist"-oriented graduate training programs to prepare students to address the specific needs of trauma-exposed youth and families. Nevertheless, calls have been made to incorporate psychological trauma training into the "core" clinical curriculum based on the high prevalence rates of trauma exposure of clients seen in mental health clinics, and on knowledge concerning the complex ways in which exposure to trauma and loss may underlie and contribute to commonly diagnosed mental and behavioral disorders (Bussey, 2008; Courtois & Gold, 2009; Huang, Macbeth, Dodge, & Jacobstein, 2004). Accordingly, tools and methods are needed that will help graduate training programs to efficiently prepare their students to provide trauma-informed services to youth and families (Whitaker, Weismiller, & Clark, 2006).

Aims and Design of a Childhood Trauma Curriculum

Given these calls to action and their associated challenges, the NCTSN convened a large task force of recognized psychological trauma experts, which first met in Fall 2007. The primary charge of the Task Force was to develop the *Core Curriculum on Childhood Trauma* (CCCT). The CCCT is intended to serve as a tool for training graduate students (as well as practicing professionals who wish to increase their expertise in psychological trauma) in foundational or "core" concepts of trauma-informed care in preparation for advanced training in specific psychological trauma-focused EBT's. Drawing on the clinical expertise of Task Force members, the empirical literature, and state-of-the-art adult learning principles, the CCCT is designed to be adapted efficiently to suit the particular training objectives and resources of a variety of programs and disciplines and to yield reliable outcome indicators (see Fouad et al., 2009). The CCCT consists of case-based, instructor-facilitated modules that draw on problem-based learning (PBL) principles to provide learners with a foundational understanding of "core" trauma-related concepts (i.e., theoretically- and empirically-based principles that undergird a broad range of psychological trauma-focused interventions), and to enhance clinical reasoning in relation to work with youth and families exposed to trauma and traumatic loss. The CCCT also fosters the integration of cultural, developmental, strength-based, and systems perspectives in work with trauma-exposed youth and families (McKenzie-Mohr, 2004). A primary aim of the CCCT is to promote the development of a trauma-informed mental health workforce by providing a sound foundational understanding of psychological trauma. This sound foundation will, in turn, prepare trainees for further training in trauma-informed evidence-based practice (Layne, Fields, Moyse-Steinberg, Krishna, & Dinov, 2009).

This article describes pilot test results of the *Core Concepts* portion of the CCCT. Given the evidence to date regarding the

utility of PBL for training clinical reasoning skills in related health disciplines (especially medicine), we first describe PBL and evidence regarding its effectiveness. Next, we describe the *Core Concepts* portion of the CCCT, followed by the pilot test results of the CCCT's effectiveness in teaching foundational trauma-related concepts to social work graduate students. We conclude with a discussion of study findings and of the promise the CCCT holds as a tool for training a national mental health workforce whose members are prepared to implement trauma-informed evidence-based practice.

Problem-Based Learning (PBL)

Overview. PBL is a learner-centered method for teaching clinical reasoning through the integration and application of knowledge to simulated cases (Dolmans, De Grave, Wolfhagen, & van der Vleuten, 2005). Given its strong emphasis on training learners to retrieve, evaluate, and apply the best available evidence to clinical problems, PBL is a potent tool for competency-focused training in evidence-based practice (Kaslow et al., 2009). PBL is now a well-established part of the medical school curriculum in many western countries and has been integrated into an array of behavioral and social science disciplines, including clinical training programs in nursing, psychology, and social work (e.g., Schlett et al., 2010). PBL draws on adult learning theory principles and methods (Davies, 2000), including self-directed learning, learning through practice, case-based "learning-in-context", and small group interaction, with the aim of promoting lifelong learning, increasing knowledge retention, and facilitating knowledge transfer to new cases and settings (Dolmans et al., 2005; Norman & Schmidt, 1992). PBL encourages the evaluation of alternative approaches to a complex problem, such as case formulation and treatment planning from different theoretical perspectives in psychotherapy training (Aronowitsch & Crafoord, 1995). By incorporating case vignettes that simulate "real life" practice, PBL methods integrate knowledge *acquisition* with knowledge *application*, thereby linking training in clinical theory and clinical research to training in "real world" clinical practice (Martin, Chrispeels, & D'Emidio-Caton, 1998). An additional advantage of using PBL as an instructional method in the crowded curricula of graduate or medical schools is that it facilitates the acquisition of skills (including clinical reasoning, interpersonal skills, and self-directed learning) that can be broadly applied to other subject and skills areas within the general curriculum (Moore, Block, Style, & Mitchell, 1994; Wilkerson, Stevens, & Krasne, 2009).

Viewed from the perspective of faculty workload, PBL carries both strengths and potential drawbacks when implemented within a graduate clinical training curriculum. On one hand, PBL may require a greater number of faculty (to facilitate small-group learning) than a standard lecture format (which can accommodate hundreds of students). In addition, PBL facilitators must receive training in clinical reasoning, the essential concepts to be learned, and methods for facilitating group learning. On the other hand, PBL faculty facilitators or tutors need not possess the level of specialized expertise in the content area that a lecturer must have. Moreover, PBL may be combined with team-based learning methods to reduce faculty workload (Michaelsen, Parmelee, McMahon, & Levine, 2008). For example, a single faculty member can work with a larger group of students, then divide them into smaller groups for small-group exercises, and then reconvene them for large-group discussion (for an illustration of combined PBL and team-based trauma training, see Strand, Abramovitz, Layne, Robinson, & Way, 2011).

Effectiveness of PBL in the health sciences. PBL and PBL-based programs produce educational outcomes comparable to those of traditional didactic programs as gauged by national standardized medical examination scores (Distelhorst, Dawson, Robbs, & Barrows, 2005; Enarson & Cariaga-Lo, 2001). Although some evidence indicates that students in PBL programs may acquire fewer facts than those in traditional programs, PBL students retain knowledge for much longer periods of time (Dochy, Segers, Van Den Bossche, & Gijbels, 2003). There is compelling evidence that PBL enhances clinical reasoning and other essential clinical competencies in medical trainees. Compared to their traditionally trained counterparts, PBL-trained practitioners make more accurate diagnoses, exhibit more effective clinical problem-solving techniques, receive more favorable faculty reviews, and form more effective interpersonal relationships with patients (Distelhorst et al., 2005). PBL also produces significantly higher scores on measures of humanism, teamwork, interpersonal skills, communication with patients or clients, psychosocial skills, self-reflective abilities, and other basic professional competencies (Schlett et al., 2010). PBL also leads to higher long-term student and faculty satisfaction as measured by more positive attitudes and opinions concerning the program, enhanced student mood, and higher class attendance (Savery, 2006). Viewed broadly from a cost-benefit perspective (although small-Group PBL requires more faculty hours than a traditional large-section lecture format) its cost is justified in part by its utility for teaching clinical assessment, case conceptualization, and other "teaching-intensive" skills—topics traditionally taught in small-group settings (Manassis et al., 2009).

The Core Curriculum on Childhood Trauma

Primary Aims

The CCCT is designed to serve as a foundational training tool that can be used either as a prerequisite to, or in conjunction with (see Strand et al., 2011), training in manualized trauma-focused EBT's. The CCCT can also support ongoing professional development (Kaslow et al., 2009) by helping experienced practitioners to expand their expertise in working with a broader range of trauma-exposed groups. Five primary aims of the *Core Concepts* portion of the CCCT include: (a) enhance practitioners' *empathic understanding* of the nature of traumatic experiences from the child's and family's perspective, and the ways in which trauma and its aftermath influence their lives; (b) facilitate the development of *clinical reasoning and clinical judgment* in practitioners who work (or plan to work) with traumatized youth and families; (c) increase practitioners' interest in, and readiness for, *trauma-informed evidence-based practice*, including training in specific EBT's; (d) provide a *clinical practice- and clinical research-friendly conceptual framework* that will facilitate clearer dialogue between practitioners and researchers of different theoretical orientations and professional disciplines; and (e) encourage learners to systematically evaluate each case from multiple perspectives in ways that help them to better understand and address the unique circumstances, strengths, and needs of each client. These perspectives

include *culture, development, wellness and strengths, systems,* and *pathology and dysfunction* (Ghosh Ippen, Ross, & Layne, 2011).

Description of the CCCT Conceptual Framework and Basic Elements

The *Core Concepts* form the theoretical foundation and essential guiding principles of the CCCT. The *Concepts* are grouped into three thematic domains to facilitate training in trauma-informed clinical reasoning. The first domain consists of *Concepts for Understanding the Traumatic Experience* (e.g., "Traumatic events are inherently complex, and consist of different traumatic moments that are encoded at multiple levels in the brain and body"; see Pynoos, Steinberg, & Piacentini, 1999; Pynoos, Steinberg, & Wraith, 1995; Pynoos, Steinberg, & Aronson, 1997). The second domain consists of *Concepts for Understanding the Consequences of Trauma Exposure and its Aftermath* (e.g., "Responses to trauma are rooted in neurobiology and involve the stress response system and key brain structures"; see Gunnar & Quevedo, 2007; Watts-English et al., 2006). The third domain centers on *Guiding Principles for Intervention with Trauma-Exposed Children and Families* (e.g., "Working with trauma-exposed youth and families can evoke distress in providers that makes it more difficult for them to provide good care"; see Craig & Sprang, 2010; Sprang, Whitt-Woosley, & Clark, 2007). Although specifically referenced to psychological trauma, the Core Concepts build on content areas that are covered in the standard curriculum of generalist graduate training programs. These content areas include psychology (e.g., stress and coping; see Taylor & Brown, 1988), human development and social ecology (e.g., familial, cultural, and societal contributions; see Bronfenbrenner, 2005; Ghosh Ippen, 2009), developmental neurobiology (e.g., de Haan & Gunnar, 2009), and developmental psychopathology (e.g., Cicchetti & Toth, 2009).

Implementing the CCCT Using Problem-Based Learning

The *Core Concepts* portion of the CCCT is comprised of detailed "real life" clinical case vignettes written by a team of noted experts in child traumatic stress. Each case is accompanied by a learning facilitator guide that contains extensive suggestions for actively learning, exploring, and applying psychological trauma principles in case conceptualization. The cases and facilitator guides are designed to create repeated opportunities for learners to practice and improve their clinical reasoning skills. A basic premise of PBL is that students are more likely to value and remember answers to questions they have generated based on their own interests compared to questions posed by instructors. Learners work together in small groups under the supervision of a tutor/facilitator whose role is to help the group remain on track while largely refraining from "teaching" in the usual sense. PBL tutors are thus more likely to ask questions than to answer them, encouraging learners to actively engage with the material and to think critically. Each case "unfolds" in stages, simulating the ways in which clinicians typically encounter and work with clients. After each section is presented, learners analyze the case by listing important facts (learning to sort out pertinent information), generating hunches and hypotheses (learning to resist premature closure on specific answers or diagnoses), choose learning issues (self-reflecting about knowledge needed for competent practice), and plan next steps (learning to identify still-missing information, and to test hypotheses by gathering additional information). Well-constructed PBL cases flow from section to section to create "just in time learning" experiences: Subsequent sections address questions evoked by prior sections, helping learners to further refine hypotheses (e.g., disconfirming evidence rules out a previously generated hypothesis). The CCCT uses an adapted version of PBL in which tutors suggest specific group discussion points and learning issues. This method retains an active learning, case-based framework while emphasizing knowledge acquisition and clinical reasoning skills.

For example, in a typical PBL case study, the group first encounters the presenting problem or situation, which consists of a brief set of facts as summarized in the cover page of a chart or a referral request. Students are then asked to list what they judge to be the relevant facts collected thus far. These usually include the child's age, race, ethnicity, and gender, reason for referral, and the child's relationship to the accompanying adult. Based on this limited information, students generate questions and (if called for by the evidence) hunches or hypotheses (e.g., the child may have been abused, the courts will need to be involved, the child is too young to verbally describe what she witnessed). Students also identify what they do not know and/or need to learn (e.g., relevant cultural norms and developmental expectations; how much language does an average 3 year-old have; legal limits to confidentiality with adolescent minors). Last, students list next steps (e.g., obtain a family history or school records, meet with an uncle to gather more information). Students are then presented with another segment of information (e.g., new information gleaned from obtaining school records or a family history). The process of organizing and making meaning of evidence, generating questions, and deciding next steps is then repeated while giving attention to both integrating new evidence and generating new hypotheses, and to "pruning away" or ruling out prior hypotheses not supported by the new information. This iterative process continues through the remainder of the case while incorporating supplementary activities at the discretion of the facilitator (e.g., empathy-building experiential exercises, group exercises, see Strand et al., 2011). Supplementary exercises are designed to both retain student engagement, and to gradually shift the learning focus away from objective fact-gathering toward an empathic understanding of the clients' subjective experience (i.e., what it really *feels* like for a child or family to undergo a traumatic experience; Layne, Ghosh Ippen, & Stuber, 2010).

CCCT Initial Pilot Test

Overview and Hypotheses

In 2009, we conducted a pilot study investigating the effectiveness of the *Core Concepts* portion of the CCCT, combined with PBL as an instructional method, in teaching foundational psychological trauma concepts to graduate students in social work. We hypothesized that CCCT-based training would be associated with pre- to postincreases in students' self-efficacy in applying the *Core Concepts* to their work with trauma-exposed children and adolescents. We also hypothesized that PBL as a learning method would be favorably received, as reflected by students' responses to open-

ended evaluation questions. Given our open-trial pilot study design, we selected self-efficacy—defined as one's self-assessed ability to execute specific skills in a particular set of circumstances and thereby achieve a successful outcome (Bandura, 1986)—as our primary quantitative outcome for three reasons. These reasons include: (a) PBL is effective in facilitating the acquisition of clinical reasoning and effective problem solving in health professionals (Altshuler & Bosch, 2003); (b) appraising one's professional knowledge and skills in relation to understanding and applying the *Core Concepts* in trauma-informed case conceptualization is consistent with social work accreditation requirements (Holden, Meenaghan, Anastas, & Metrey, 2002) and with calls within clinical psychology to foster professional self-reflection in relation to specific competency domains (Fouad et al., 2009); and (c) evaluating self-efficacy is congruent with calls to expand beyond instructor—derived learning outcomes that emphasize knowledge acquisition, to also include the measurement of attitudes and beliefs that play a role in successfully translating new knowledge into "real world" clinical practice (Houlden & Collier, 1999).

Method

Pilot test site. The *Core Concepts* portion of the CCCT was pilot-tested in 2010 at Fordham Graduate School of Social Service in a classroom-based academic setting with graduate students in social work. The learning facilitator (V. Strand) had over 30 years of professional field experience in working with traumatized youth and families, as well as extensive experience in teaching clinical courses.

Participants. Pre- and posttests were completed by 43 masters-level students in social work (completion rate = 90%). Table 1 presents their demographic information.

Procedures. The *Core Concepts* were pilot tested in the form of a 2-week intensive (5 days per week) 30-hr elective course. The course covered five CCCT clinical vignettes and adhered closely to PBL methods through the use of small-group exercises and large-group discussions. The evaluation protocol, approved by the Fordham IRB, used a pre/post open-trial study design. At pretest, students provided information relating to personal demographics, prior trauma training, and the prevalence of trauma exposure in their caseloads. Students also completed the self-efficacy measure. At posttest, students completed the self-efficacy measure and provided open-ended qualitative feedback about the course.

Table 1
Demographic Characteristics of Participating Students

	(n = 42)
Variables	% responding "Yes"
Gender:	
Male	7
Female	93
Race/Ethnicity:	
White	69
Hispanic	12
African American	14
Asian	
Other	5
% Caseload w/ trauma:	
0%	19
5%−25%	16
26%−50%	16
51%−75%	8
76%−100%	41
Trauma-trained supervisor	10
Access to Trauma Training:	
From agency	33
Trained in EB TT	17
Conference attendance	24

Measures. We used an instrument (available from V. Strand) that gathers information on demographics, history of psychological trauma training, prior experience in working with trauma-exposed children and youth, perceived self-efficacy in applying the *Core Concepts* to work with trauma-exposed youth, and personal reactions to the course. The self-efficacy measure consists of 10 statements, each of which corresponds to a *Core Concept* in working with trauma-exposed youth. Respondents recorded their responses to the question, "I am confident in. . ." on a 9-point scale ranging from 1 (*not confident at all*) to 5 (*somewhat confident*) to 9 (*extremely confident*). Internal consistency of the 10 self-efficacy items as gauged by Cronbach's Alpha was high at both pretest (.95) and posttest (.92).

Data Analysis

Descriptive statistics pertaining to both the participants' and supervisor's psychological trauma training experience, and the prevalence of trauma exposure in the participants' caseloads, are presented in Table 1. Pre- to posttest outcomes were analyzed using dependent-samples t tests. Table 2 presents means, standard deviations, and t test results. Given the small sample size, within-group pre- to posttreatment effect sizes were calculated using Cohen's d (Cohen, 1988; see Table 2 for relevant formulae).

Results

Descriptive data. As shown in Table 1, nearly half of the trainees indicated more than 50% of their clients had reported histories of psychological trauma; the majority of trainees reported that at least 25% of their clients had trauma histories. Trainees described their field instructors or supervisors as valuable training resources, but identified very few instructors or supervisors as having received psychological trauma training. A minority of trainees were in placements that offered training in trauma treatment.

Self-efficacy. Given the small sample size and high internal consistency of the 10 self-efficacy items, the items were pooled into an aggregate "*self-efficacy in relation to applying the Core Concepts in my work with trauma-exposed children and adolescents*" score and evaluated using a dependent-samples (pre- to posttotal score) t test. As hypothesized, the result reflected a significant pre-post-course increase in mean self-efficacy ratings ($p < .001$) and generated a very large effect size (Cohen's d = 3.16; see Table 2).

Quantitative and qualitative evaluations of the PBL course format. Quantitative student evaluations of PBL recorded on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) were generally high (see Table 3). These ratings underscore the effectiveness, from the students' perspectives, of PBL as a tool

Table 2
Pre- To Post- Changes in Self-Efficacy in Applying Core Trauma Concepts to Clinical Work With Traumatized Children and Adolescents

		Pre-course mean self-efficacy[a] rating		Post-course mean self-efficacy rating					
	N	*M*	*SD*	*M*	*SD*	*t*[b]	*df*	*p*	*Effect size*[c]
Self-Efficacy Mean Total Score	41	4.08	1.34	7.60	.83	−19.49	40	<.001	3.16

[a] Cronbach's alpha for the 10 self-efficacy items was $\alpha = .95$ at pre-test and $\alpha = .92$ at post-test. [b] Dependent-samples *t* test. [c] Cohen's d, as calculated according to the formula:

$$d = \frac{\bar{x}_1 - \bar{x}_2}{s}$$

and the pooled variance (*s*) between the pre- and post-course groups was calculated as:

$$s = \sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}}.$$

for teaching core psychological trauma principles. Most notable are the high ratings for learning trauma-related concepts in ways that are engaging and transparently applicable to trainees' clinical work.

The students' posttest qualitative responses shed additional light on the ways in which PBL may enrich psychological trauma training. In response to the question "What did you experience in this course that is most useful in working with trauma?" nearly half the students responded with the theme, "Going through the trauma cases in a way that reflects real life practice." Course elements identified as "Most helpful" included learning about such topics as principles of trauma-focused intervention, risk and protective factors, trauma reminders, and the effects of psychological trauma and traumatic loss on youth and family functioning. Students were generally enthusiastic about PBL as a learning method; several students openly urged the faculty to adopt PBL in other department courses. With regard to recommendations for improving the course, over one third suggested increasing the diversity of the cases (e.g., "more detail regarding history or ethnicity"). In addition, 16% of students (each) requested "more intervention tools for clinicians", and called for more diversity in the group exercise questions (e.g., "The questions for each case did get repetitive. I would recommend more role plays and possibly videos"). Most students (71.4%) reported that "It was a great class", whereas a few (7.1%) suggested that students be allowed to use their own cases.

Discussion

Major advances are now underway in the mental health field that may strongly influence the ways in which practitioners are trained, evaluated, and deliver mental health services to trauma-exposed youth and families. Building our national capacity to implement effective training in the core concepts related to psychological trauma in youth and families requires developing effective curricula, trainers, evaluators, and evaluation tools. Instead of "teaching to the test," the goal of competency-oriented instruction is to "teach to the practice and the practice setting" in ways that create transparent continuity between training methods, evaluation methods, credentialing criteria, and professional practice (Nelson, 2007). That is, students are trained using realistic cases that simulate clinical practice, are evaluated using similarly realistic methods, and then transfer their knowledge, skills, and values to professional practice (Kaslow et al., 2009).

The CCCT may serve as a potent tool for foundational training (either as a prerequisite or as a concurrent course offering, see Strand et al., 2011) in specific trauma-focused evidence-based treatments. PBL encourages learners to evaluate complex "real

Table 3
Reactions to the Problem-Based Learning Format

Course evaluation item (endpoints are 1 = *strongly disagree*; 5 = *strongly agree*)	(*n* = 41)
1. A sequential flow of course content is presented in consistent and solid manner	4.5
2. Length and timing of the course content in each session is just right	3.9
3. Course content in each session is divided into equal pieces	4.0
4. Each session of the course provides concrete content	4.2
5. Group activities seem authentic	4.3
6. Course activities flow in a strategic and logical manner	4.0
7. Instruction encourages active engagement and contribution to learning process	4.8
8. Increases students' ability to apply trauma treatment concepts to their work	4.7
9. Feedback on students' performance and learning presented throughout course	4.2
10. Course materials are appropriate	4.3

$p < .001$.

world" problems from multiple vantage points, and seeks to motivate learners to engage in EBP as a profession-long process of self-reflection and professional growth (Fouad et al., 2009; Nelson, 2007). The focus of CCCT clinical cases on understanding psychological trauma and its effects within "real life" contexts is consistent with two APA Presidential Task Force calls to action (2006; 2008) for training and implementation of EBP that addresses the impact of "sociocultural and familial factors (e.g., gender, gender identity, ethnicity, race, social class, religion, disability status, family structure, and sexual orientation) and environmental context (e.g., institutional racism, health care disparities)" with particular attention paid to integrating EBP with culturally, geographically, and socioeconomically diverse groups (APA, 2006, p. 279). The CCCT may thus assist in filling a current void in evidence-based educational programs for childhood psychological trauma.

Pilot study results. Our pilot data suggest that PBL may be an effective tool for engaging students in exploring and applying foundational psychological trauma principles. Participants reported significant increases in self-efficacy in applying core trauma concepts to work with trauma-exposed children and adolescents. This increase in mean self-efficacy ratings also generated a very large effect size (Cohen's $d = 3.16$). These results should also be considered in light of several caveats. First, the open-trial design of this pilot study precludes the ability to infer whether course participation *caused* self-efficacy ratings to increase. These results should thus be treated as preliminary, and underscore the need for replication using more rigorous evaluation methods. In addition, the quantitative arm of the evaluation relied heavily on self-efficacy ratings in applying the *Core Concepts* to work with trauma-exposed youth. Such ratings are susceptible to individual differences in how survey items are interpreted, as well as response bias (Karabenick et al., 2007; Richardson, 2004). Further, the course learning objectives and measured outcomes were limited in scope, in that they strongly emphasized clinical reasoning in the context of *trauma-informed information-gathering and case conceptualization*. In contrast, they did not directly assess the transfer of conceptual knowledge and clinical reasoning skills to "real life" clinical practice in students' practicum settings—that is, the degree to which training in the *Core Concepts* facilitates "gold standard" training, which integrates classroom-based didactic training with field-based supervision in evidence-based practice (Weissman et al., 2006). Training in the CCCT is intended to provide a sound conceptual understanding of childhood traumatic stress in ways that help trainees grasp the undergirding rationale and basic objectives of trauma-informed treatment. This foundational knowledge, in turn, will help them to make better-informed decisions regarding how to select and implement EBT's in ways that best address each client's needs, strengths, culture, developmental level, and life circumstances (Layne et al., 2010). We nevertheless emphasize that no portion of the CCCT should be viewed or used as a treatment protocol in itself. Training in specific EBT's will thus require separate training within the general clinical curriculum.

Study implications. Notwithstanding these caveats, these pilot study results are promising and carry important implications. Students were generally enthusiastic about PBL as a learning method and asked that it be incorporated into other courses in the social work curriculum. Students also expressed a heightened appreciation for such concepts as trauma reminders, the role of the caregiver in treatment, understanding psychological trauma and traumatic loss within the broader ecology, and the enduring impact of psychological trauma over time if not effectively addressed. Our results also suggest the need for curricula to train *both* supervisors *and* clinicians in trauma-informed practice. Nearly 50% of the trainees reported that over half their caseload included clients with a history of trauma exposure; however, less than 30% of trainees had been trained in an evidence-based trauma treatment, and only 10% of trainees reported that their field instructor or supervisor had received formal training in trauma-focused intervention.

These initial results are consistent with efforts by other teams to develop and implement trauma-informed curricula in ways that promote knowledge transfer to "real world" practice settings (e.g., Black, 2006; O'Halloran & O'Halloran, 2001). For example, Jordan (2006) developed, taught, and revised a psychological trauma training curriculum to local mental health professionals and teacher-counselors four weeks following a tsunami in Sri Lanka. The curriculum contents were carefully tailored to address the needs of tsunami survivors as well as other contextual factors including civil war, cultural and religious values and beliefs, and local customs, and received similarly positive evaluations by participants. More broadly, the strong emphasis placed by the CCCT cases on addressing the surrounding ecology, including cultural, developmental, and strength-based factors; as well as realistic training that simulates "real life" practice, are consistent with recommendations by the Task Force on International Trauma Training for training health care providers to work in conflict settings (Eisenman et al., 2006). Each of these curriculum development efforts (including the CCCT) share common challenges: The need to develop practical and cost-efficient training and evaluation methods that (a) articulate learning objectives in the form of specific, measurable competencies (Fouad et al., 2009; Kaslow et al., 2009); (b) enhance learners' abilities to gather, integrate, evaluate, and make clinical decisions based on diverse types and sources of information; (c) address learner's empathic reactions to the material, including the risk for vicarious psychological trauma and the need for appropriate self-care (Craig & Sprang, 2010; O'Halloran & O'Halloran, 2001; Sprang et al., 2007); and (d) facilitate knowledge transfer to "real life" practice or intervention settings.

Further refinements and long-term applications. Efforts are currently underway to increase the breadth and diversity of the CCCT by crafting additional cases, including family focused and international cases. This will provide a greater selection of cases around which courses can be designed, although our practical experience suggests that the average university course can cover only four to five cases in depth. In addition, more rigorous evaluations are currently underway that include a broader range of learning outcome measures. These include outcomes associated with "gold standard" clinical training (Weissman et al., 2006) that interweaves classroom-based training in both the CCCT and an EBT, with supervised implementation of that EBT in a field placement (see Strand et al., 2011). We are also developing ways to evaluate whether training in the CCCT yields incremental benefits beyond training in a trauma-focused EBT alone. Further, consistent with calls to integrate competency-based training and evaluation into clinical training (Fouad et al., 2009; Kaslow et al., 2009; Nelson, 2007), plans are underway for incorporating

"competency-based" evaluation metrics to better evaluate the transfer of clinical knowledge to clinical practice settings (e.g., using a novel clinical case vignette to assess case conceptualization skills). Such efforts should extend beyond this pilot study by including indicators of knowledge acquisition, clinical reasoning skills, clinical judgment, or practice behaviors with clients using both formative and summative assessment tools. We are also incorporating *"data proficiency"* training materials (e.g., including assessment data in case descriptions, such as test scores and clinical cutoff scores) at selected pilot sites to complement the *"clinical proficiency"* training materials already found in the CCCT, with the aim of better preparing learners to competently carry out all aspects of trauma-informed evidence-based practice (Layne et al., 2009). Last, efforts are underway to identify common components of trauma-focused interventions, with the aim of shedding light on "common denominator" intervention objectives and practice elements to help trainees make better-informed decisions about how to select, implement, and individually tailor specific evidence-based treatments for specific clients and settings (Layne et al., 2010).

We also underscore that although this pilot test focused on training in a graduate school of social work, the CCCT is nevertheless designed to be widely applicable across disciplines, theoretical orientations, settings, and level of clinical experience. Multiple strategies will thus be required for its successful dissemination. As described by Courtois & Gold (2009):

> An important recognition that has developed in all of these training efforts in psychological trauma is that preparation to work in this area, particularly for professional practice, requires a multifaceted approach. Comprehensive training to work with traumatized populations requires didactic instruction in the myriad forms of traumatic events and potential emotional, behavioral, cognitive, and somatic responses to psychological trauma. It also must include extensive professional skills training and supervised practical experience in working with trauma-exposed groups for the involved service-provider (p. 16).

Important questions also need to be answered regarding which factors are essential to successfully disseminate the CCCT. These include how to select and prepare qualified tutors in terms of levels of experience in treating traumatized youth and families, specialized training or certification, and knowledge about different trauma-focused EBT's. Currently, the CCCT Task Force is disseminating online presentations that focus on applying PBL and team-based learning principles and skills to CCCT training.

With respect to broader applications, these pilot results suggest that the CCCT may play a role in promoting the development of a *trauma-informed mental health workforce* (Courtois & Gold, 2009) in at least five ways. First, PBL shows considerable promise for enhancing trauma-informed clinical reasoning and clinical judgment (Proctor, 2007). Second, PBL can be implemented in ways that incorporate many "best practice" instructional design principles, including specific methods for presenting information (Clark, 2010) in ways that will make clinical content more memorable and directly transferable to "real life" practice. Third, the CCCT may also be used to develop clinical competency benchmarks (Fouad, 2009), such as evaluating the transfer of conceptual understanding to such "clinical proficiency" and "data proficiency" knowledge and skills domains as clinical assessment, case conceptualization, treatment planning, treatment monitoring, and treatment evaluation. Fourth, the CCCT can also promote profession-long development by encouraging practitioners to self-reflect and strategically broaden their range of expertise with different age, cultural, or other groups (Kaslow, 2004). Fifth, CCCT cases can be adapted for use in various child service systems (child welfare, judiciary, youth corrections, education, or medical) to promote the development of trauma-informed systems of care (Ko et al., 2008).

Conclusion. A foundational psychological trauma training curricula may serve as a powerful tool with which to train a mental health workforce whose members are capable of engaging in trauma-informed evidence-based practice throughout the professional careers (Kaslow, 2004). Thus, developing, evaluating, and refining effective training curricula that cover a broad spectrum of knowledge and skills essential to evidence-based practice (Layne et al., 2009), and preparing and recruiting trauma-informed learning facilitators to implement them, are a high priority.

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