

The Expanded School Mental Health Collaboration Instrument [Community Version]: Development and Initial Psychometrics

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Abstract This article presents the psychometric properties of the Expanded School Mental Health Collaboration Instrument [Community Version], a measure for assessing collaboration from the perspective of community-based mental health professionals working in schools. A three-scale instrument (Types of Collaboration, Influences on Collaboration, and Perceived Benefits of Collaboration) was developed based on findings from focus group interviews and a review of the literature. This instrument complements an existing measure of collaboration that considers the perspectives of school professionals involved in expanded school mental health (ESMH). Exploratory factor analyses were used to define a set of factors for each of the three scales. Preliminary psychometric examination suggests this is a promising instrument that should be studied further. Implications for ESMH practitioners and researchers are proposed.

Keywords Expanded school mental health · Collaboration · Measurement · Instrument · Community-based mental health professionals

Introduction

School and community collaboration as a way to meet the needs of youth and families continues to create new possibilities in systems with limited resources while contributing to frustrations among frontline professionals. By bridging and leveraging knowledge and resources across systems, collaboration is assumed by policymakers to be a potential solution to schools overwhelmed by non-academic barriers to learning, such as mental health disorders, familial poverty, and community violence (Anderson-Butcher, Stetler, & Midle, 2006). At the same time, frontline professionals frequently cite profession-driven differences related to training, terminology, and role perceptions as real-world obstacles to collaboration (Mellin & Weist, 2011). Across fields, rhetoric celebrating the assumed benefits of collaboration continues to overshadow the everyday realities of those who are asked to perform it (Bryan & Holcomb-McCoy, 2007; Lemieux-Charles & McGuire, 2006; Trach, 2012).

There is limited supporting research for the assumption that collaboration is associated with improved client-level outcomes (Lemieux-Charles & McGuire, 2006; Trach, 2012). The same is true in the field of expanded school mental health (ESMH), in which mental health service providers from the community explicitly augment those provided by school professionals (i.e., counselors, psychologists, and social workers, see Weist, 1997) as anecdotal accounts in the literature espousing the benefits of collaboration dwarf actual research (Mellin, 2009a). A key reason for the lack of research in this area is the relative absence of tools to measure or evaluate it (Mellin, 2009a) as well as challenges associated with measuring collaboration (Mellin et al., 2013). Studies advancing understanding of whether and how collaboration relates to child-

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level outcomes, as well as tools for evaluating and improving practice, are largely lacking.

-Persistent federal, state, and local policies that call for collaboration, however, continue across educational and community institutions [e.g., see two US presidential reports/initiatives—New Freedom Commission on Mental Health (2003) and Now is the Time (2013)]. In spite of this lack of supporting research and infrastructure aids such as measurement approaches and tools, the emphasis on collaboration will no doubt expand, as no single entity can provide the critical services needed by young people, especially in communities that regularly experience poverty, racism, and violence (Warren, 2005). Community-based mental health professionals are one group that may work in or with schools to address these and other issues that impact learning and other developmental outcomes for young people.

Community-Based Mental Health Professionals Working in or With Schools

Evidence continues to support that schools are an important setting for accessing mental health services for young people (Costello et al., 2014; Juszczak, Melinkovich, & Kaplan, 2003; Anglin, Naylor, & Kaplan, 1996; Burns et al., 1995). A systematic review of the literature found that mental health visits constituted 9–30 % of all visits to school-based mental health centers (SBHCs), and students who had access to these services were 3–10 times more likely to seek help with mental health or substance abuse problems than those with no access (Bains & Diallo, 2015). Other research found a 21 % increase in utilization of school-based mental health services over a three-year period in one SBHC program (Wade et al., 2008). Moreover, schools can serve as a gateway to mental health services through prevention programs (Kataoka, Stein, Nadeem, & Wong, 2007). Although there is no formal way to document growth in community mental health professionals in schools, related to no ongoing surveillance of this by the US government, a federal report by Foster et al., (2005) did find roughly half of 83,000 sampled US schools either had community mental health staff working in the building or had formal memoranda of agreement to connect students in need to these services. This level of community mental health professionals working in schools creates a unique intersection between community and educational systems, challenging professionals from both systems to collaborate with each other. In this context, community-based mental health professionals, such as clinical counselors, psychologists, and social workers, work side by side with school counselors, school psychologists, educators, and school nurses (Weist et al., 2006). At first glance, it may seem reasonable that these professionals have enough

overlapping training to facilitate effective collaboration. Yet, in the real-world context of schools, differences in professional training (Ball, Anderson-Butcher, Mellin, & Green, 2010) and important practical distinctions between school and community settings, such as administrative and financial barriers (Michael, Renkert, Wandler, & Stamey, 2009), are cited as challenges that may make interprofessional collaboration difficult.

Fundamental differences in theoretical orientation and basic terminology, as well as issues of professional territory, can impede collaboration (Waxman, Weist, & Benson, 1999; Weist et al., 2012). School-based mental health professionals such as school counselors and school social workers, for example, may worry about the security of their positions when community-based professionals with the same training are employed to work in their schools. The fear of being supplanted by professionals with similar training is real and can lead to strained or completely severed relationships between school- and community-based mental health professionals. Other problems are related to the unique social, political, and human context of educational settings that can affect readiness to adopt new and practices (Flaspohler, Anderson-Butcher, Bean, Burke, & Paternite, 2008). Schools can be frenzied and crisis-driven and further complicated by rigid student schedules (Langley, Nadeem, Kataoka, Stein, & Jaycox, 2010). Myriad other problems such as limited space to work, marginalization of the school mental health agenda, policies concerning confidentiality, and lack of program coordination may critically challenge service delivery (Weist et al., 2012). At the same time, training programs may not be meeting the demand for community-based mental health professionals to work in schools. Emphasis on building competencies related school mental health practice among community mental health counselors, for example, is rare (Ball, Anderson-Butcher, Mellin, & Green, 2010), and new graduates are often challenged to develop these skills on their own (Michael, Bernstein, Owens, Albright, & Anderson-Butcher, 2014). Lacking comprehensive preparation to work with children and adolescents (Mellin, 2009b) or within the unique context of school culture (Mellin & Weist, 2011; Osterloh & Koorland, 1997) can lead to a mismatch of goals. For example, community-based mental health professionals may stress clinical outcomes, while school-employed professionals emphasize attendance, achievement, and disciplinary referrals (Green et al., 2009).

Given these challenges, coupled with continued demand for interprofessional collaboration between community-based and school-based mental health professionals (National Research Council & Institute of Medicine, 2009; New Freedom Commission on Mental Health, 2003; US Public Health Service, 2000), it is critical to note that little

research in ESMH has been conducted from the perspective of community-based mental health professionals working in schools. Instead, researchers have emphasized the perspective of teachers (Anderson, 2013; Ball & Anderson-Butcher, 2014), school psychologists (Bradley-Klug et al., 2013; Splett, Fowler, Weist, McDaniel, & Dvorsky, 2013), and school social workers (Berzin et al., 2011; Iachini & Wolfer, 2015). Considering the documented differences in training (particularly having little or no preparation for work with students or in schools), it is likely that community-based mental health professionals experience unique challenges to collaborating with school professionals that signal key implications for interventions to improve collaboration. Expanding research to develop a tool that specifically measures the perspective of community-based mental health professionals working in schools, therefore, represents important and new contribution to ESMH literature.

Measurement Challenges and Preliminary Research

Across fields, scholars note three factors that have limited the measurement of collaboration: (a) unclear or inconsistent definitions of collaboration (Thomson, Perry, & Miller, 2007); (b) assessments that only measure one aspect or perspective of collaboration (McIntosh et al., 2008); and (c) lack of attention to contextual variables that likely impact collaboration (Lemieux-Charles & McGuire, 2006). Although there are a few instruments available for measuring collaboration in schools (Bryan & Holcomb-McCoy, 2007; Mellin et al., 2010), these instruments are limited by their focus on a single professional group (i.e., The School Counselors in Partnership Survey; Bryan & Holcomb-McCoy) or lack of attention to contextual variables (e.g., school environment or administrative support) that likely impact collaboration (i.e., The Index of Inter-professional Team Collaboration—expanded school mental health). Additionally, these measures do not specifically evaluate the perspectives of community-based mental health providers working in school who, based on their pre-service training and likely practice experiences of supervisors that are primarily limited to community settings, encounter different challenges to ESMH collaboration.

This two-phase study addresses these common challenges to the measurement of collaboration by: (1) using a clear and consistent definition of collaboration; (2) measuring multiple perspectives of collaboration; and (3) giving attention to contextual variables that likely impact this practice strategy. First, both phases of the study used Gray's (1989, p. 5) definition of multiparty collaboration (“...a process through which parties who see different

aspects of a problem can constructively explore their differences and search for solutions that go beyond their own limited vision of what is possible”) as well as social capital theory (Bourdieu, 1986; Coleman, 1988; Putnam, 2000); a theory that argues new ideas and resources are generated through relational networks) to conceptualize collaboration and guide item development. Second, to explore multiple aspects of collaboration, both school- and community-based mental health professionals were interviewed during Phase I of this study. Last, both the focus groups (Phase I) and instrument development (Phase II) included specific attention to contextual variables such as the school environment and administrator support that likely impact ESMH collaboration.

Phase I of the study contributed to the development of the current instrument. During Phase I of the study, the authors interviewed both school- and community-based mental health professionals (separately) to explore their experiences with ESMH collaboration. Findings from the focus groups revealed similar influences on ESMH collaboration (*Interpersonal Processes, Buy-In Among School Professionals, Outreach and Approach by Mental Health Professionals From Collaborating Agencies, Importance of Administrative Support, and School Environment and Practices*) across the two groups, although nuances specific to professional role were noted. For example, in the context of how community-based mental health professionals outreach to school professionals, community-based mental health professionals noted the reality of the power differential between school- and community-employed professionals and being guests in schools. From the perspective of participants in Phase I, the collaborations were not always experienced as egalitarian and required some additional flexibility or uneven compromise from the community-based mental health professionals.

Two versions (one for school professionals and one for community-based mental health professionals) of the Expanded School Mental Health Collaboration Instrument were developed during Phase II of the study. The first version, the Expanded School Mental Health Collaboration Instrument [School Version], is a three-scale, 70-item instrument that measures various dimensions of ESMH collaboration from the perspective of school professionals (Mellin et al., 2013). The first scale, Types of Collaboration (63 % variance), assesses three factors: (a) *Collaboration with Community-Based Mental Health Professionals* (accounting for more than half of the variance, 37 %); (b) *Collaboration with Families*; and (c) *Collaboration with School Colleagues*. The second scale, Influences on Collaboration (64 % variance), assesses four factors: (a) *Outreach and Approach by Mental Health Professionals from Collaborating Agencies* (accounting for more than half of the variance, 38 %); (b) *Interpersonal Processes*;

(c) *School Outreach to Communities and Families*; and (d) *School Administrator Support*. The third scale, Perceived Benefits of Collaboration (69 % variance), includes four factors: (a) *Support for Students and Teachers* (accounting for more than two-thirds of the variance, 48 %); (b) *Increased Mental Health Programming*; (c) *Improved Access for Students and Families*; and (d) *Improved Family–School Relationships*. Here, the second version of this instrument (specific to the perspectives of community-based mental health professionals) is introduced and psychometrics shared.

The Current Study

The current study builds on the important contributions of Bryan and Holcomb-McCoy (2007), Mellin et al., (2010), and Mellin et al., (2013), for measuring collaboration in schools to develop an instrument that explicitly considers the perspectives of community-based mental health professionals engaged in expanded school mental health (ESMH). The aim of the current study, therefore, is to develop and test a tool for research and evaluation of collaboration in ESMH that aims to address common challenges to measuring collaboration. The development of the tool was grounded in a clear and well-accepted definition of multiparty collaboration as well as social capital theory, addressing measurement concerns about conceptual clarity. Additionally, this instrument includes versions for both school and community professionals engaged in collaborative work as well as multiple aspects of collaboration addressing the previously noted limitations of unidimensional measures of collaboration. Lastly, items were also developed based on interviews with community-based mental health professionals working in or with schools. These interviews provided real-world perspectives of contextual variables such as administrative support or the school environment that impact collaboration.

Methods

Participants

The sample for this study included 199 community-based mental professionals involved with expanded school mental health (ESMH) collaboration. Females accounted for 88 % ($n = 173$) of the respondents. A majority of the participants were White (non-Hispanic; 87 %, $n = 173$). Other racial and ethnic backgrounds represented among participants included African-American/Black (6 %, $n = 12$), Hispanic/Latino Native (3 %, $n = 6$), Asian/Pacific Islander (2 %, $n = 3$), and American Indian/

Alaskan Native (1 %, $n = 2$). Participants also indicated their professional discipline and training backgrounds; those most frequently designated included social work (28 %, $n = 55$), occupational therapy (19 %, $n = 37$), and counseling (18 %, $n = 36$). Participants were asked to identify the level of school they worked in or with; among those indicated, 51 % ($n = 103$) were elementary, 11 % ($n = 272$) were combined elementary/middle, 17 % ($n = 34$) were middle, and 19 % ($n = 38$) were high school. Lastly, in order to better understand community-level variations in ESMH collaborations, participants were also asked to indicate the type of community where the school they worked in or with was located. Among the types of communities represented, 26 % ($n = 52$) were rural, 39 % ($n = 78$) were suburban, and 34 % ($n = 68$) were urban.

Development of Items and Procedures

A majority of the items for the measure were developed based on interviews from Phase I of the study. Review of related measures such as the School Counselors in Partnerships Survey (Bryan & Holcomb-McCoy, 2007) also informed item development. Content validity was evaluated through pilot testing the items with the Phase I focus group participants. Consistent with recommendations for scale development by DeVellis (2012), participants were asked to comment on how relevant items were to the scales and on any items that were unclear. Participants were also invited to suggest additional items.

After revisions, the instrument initially included 100 items that measured collaboration across three scales (Types of Collaboration, Influences on Collaboration, and Perceived Benefits of Collaboration). Some items were worded negatively in order to moderate agreement bias (DeVellis, 2012). Responses for all items on the scale were measured on one of two, four-point Likert-type scales (1 = never to 4 = often for Types of Collaboration; and 1 = strongly disagree to 4 = strongly agree for Influences on Collaboration and Perceived Benefits of Collaboration). Disagreement remains on the value of even- or odd-numbered scales (DeVellis, 2012); however, the decision was made to use an even-numbered scale to require respondents to make a clear (even if socially undesirable) statement about their experiences with ESMH collaboration.

Institutional review board/human subjects approval was granted for this study. The instrument was distributed for testing via an online data collection tool through the University of Maryland, Center for School Mental Health listserv (see www.csmh.umaryland.edu). This federally funded center allowed use of their listserv to recruit self-identified and voluntary participants for this study. E-mail recruitment included a brief overview of the study and a

link to the online data collection tool in which participants could review the informed consent, complete the instrument, and register for a drawing to win 1 of 100, \$15.00 gift cards to Starbucks. Follow-up messages were also distributed 7 and 14 days after the initial message. The informed consent for the measure included an eligibility statement that advised potential participants that they were only eligible to participate if they were a practicing professional from a collaboration mental health agency and other demographic questions (e.g., “role in school mental health,” “level of school you currently work in,” and “type of community the school is located in”) were also designed to eliminate participants who were not actively practicing in an ESMH environment. Once they completed the demographic form online, participants were prompted to respond to the items from the instrument based on their experiences during the past year. Participants were advised that if they worked in more than one school, their answers should be based on the school they work most frequently with. The instrument took approximately 15–20 min to complete, and participants could skip items.

Data Analysis

Data management and analysis were conducted using SPSS 22 for Mac. SPSS’s Missing Value Analysis tool was used to help make decisions about cases in which data points were missing. The tool indicated that data were missing completely at random (MCAR); therefore, regression imputation was used to replace missing values (Sterner, 2011; Tabachnick & Fidell, 2007). Exploratory factor analysis (EFA) using principal axis factoring with promax rotation was used for data reduction and concept refinement for each of the three scales included in the instrument. Oblique rotation was used because there was an assumption of correlation between the three scales. Internal consistency estimates were also calculated and are included below.

Results

To determine the suitability for conducting an exploratory factor analysis (EFA) of each scale, Kaiser–Meyer–Olkin (KMO) measure (Kaiser, 1974) and Bartlett’s (1954) test of sphericity were examined prior to data analysis. Results from these tests indicated that EFAs were appropriate for each scale (Types of Collaboration, KMO value of .82, Bartlett’s significant $p < .001$; Influences on Collaboration, KMO value of .91, Bartlett’s significant $p < .001$; Perceived Benefits of Collaboration, KMO value of .94, Bartlett’s significant $p < .001$).

The Kaiser–Guttman rule of retaining factors with eigenvalues over 1.0, as well as scree plot examination,

was used to make decisions about the number of factors to retain for each scale (Tabachnick & Fidell, 2007). For parsimony, factor loadings for each item were examined using a minimum criterion loading of .45 or 20 % overlapping variance (Tabachnick & Fidell, 2007). Additionally, items that cross-loaded at .32 or higher were eliminated (Tabachnick & Fidell, 2007). After making decisions about the number of factors to retain and items to delete for each scale, each factor analysis was run again. Finally, a reliability analysis was conducted for each subscale to identify items that would increase the reliability of the scale if eliminated. The following section presents the results of each EFA.

Exploratory Factor Analyses

Types of Collaboration

Initial review of the eigenvalues for this scale suggested a six-factor solution; however, a closer examination of the scree plot indicated a more likely and more interpretable three-factor solution. The three factors accounted for 57 % of the variance. The first factor, *Collaboration with Community-Based Mental Health Professionals* (28 % of the variance), includes seven items with loadings between .58 and .84. Item loading on this factor considers collaborations with other mental health professionals located in community settings. The second factor, *Collaboration with School Colleagues* (18 % of the variance), comprises six items (loadings ranging from .47 to .74) that describe collaborations between community mental professionals with school professionals. The third factor, *Collaboration with Families* (11 % of the variance), includes three items that assess relationships between community-based mental health professionals and families. Loading of items on this scale ranged from .66 to .78. The EFA for this scale reduced the original 24 items to 16. Six items were eliminated based on low loadings and two for cross-loadings. Table 1 presents the 16 remaining items and the factor loadings from the principal factor analysis.

Influences on Collaboration

Examination of both the eigenvalues and scree plot suggested a likely four-factor solution for this scale. The four factors accounted for 63 % of the variance. The first factor, *Outreach and Approach by Mental Health Professionals from Collaborating Agencies* (36 % of the variance), comprises 10 items (loadings ranging from .52 to .81) that assess how community-based mental health professionals approach working in schools. The second factor, *School Administrator Support* (13 % of the variance), includes eight items with loadings between .71 and .84. Item

Table 1 Items and factor loadings for the Types of Collaborations Scale ($N = 199$)

	Factor		
	1	2	3
<i>In my role as a community mental health professional, I...</i>			
1. Consult with community mental health professionals about student needs	.66	-.15	.11
2. Complete comprehensive student assessments with community mental health professionals	.74	.08	.00
3. Develop plans for intervening with students with community mental health professionals	.84	-.13	.04
4. Intervene in student crises with community mental health professionals	.83	-.00	.06
5. Deliver student mental health services (e.g., group counseling, classroom prevention activities) with community mental health professionals	.76	.09	-.14
6. Coordinate efforts to increase family involvement with community mental health professionals	.71	-.00	.10
7. Participate in school-based teams (e.g., student support, IEP) with community mental health professionals	.58	.14	-.00
8. Consult with school colleagues about student needs	-.13	.51	.14
9. Complete comprehensive student assessments with school colleagues	-.11	.74	.12
10. Develop plans for intervening with students with school colleagues	-.08	.68	-.07
11. Intervene in student crises with school colleagues	.20	.56	-.03
12. Participate in school-based teams (e.g., student support, IEP) with school colleagues	-.05	.59	-.07
13. Participate in school leadership activities (e.g., school improvement planning with school colleagues)	.11	.55	-.14
14. Consult with families about student needs	-.10	.09	.75
15. Complete comprehensive assessments with families	.14	.04	.66
16. Develop plans for intervening with students with families	.06	-.09	.77

loading on this factor considers the extent to which school administrators support school mental health. The third factor, *Interpersonal Processes* (8 % of the variance), includes seven items that assess important aspects of relationships between community-based mental health professionals and their collaborators in schools. Loading of items on this scale ranged from .56 to .71. The final factor, *School Outreach to Communities and Families*, considers the extent to which schools welcome the involvement of community organizations and families and accounted for 6 % of the variance. Loadings among the five items in this scale ranged from .59 to .74. The EFA for this scale reduced the original 54 items to 30. Twenty-one items were eliminated based on low loadings and one for increasing the reliability of the scale. Table 2 presents the 30 remaining items and the factor loadings from the principal factor analysis.

Perceived Benefits of Collaboration

Eigenvalues for this scale initially indicated a four-factor solution; however, closer examination of the scree plot suggested a more interpretable three-factor solution. The three factors accounted for 65 % of the variance. The first factor, *Improved Family–School Relationships* (48 % of the variance), comprises four items (loadings ranging from .75 to .89) that describe how relationships between families

and schools may change as a result of collaborations. The first factor, *Increased Mental Health Programming* (9 % of the variance), includes six items that assess perceived changes in mental health service access associated with collaboration. Loading of items on this scale ranged from .49 to .82. Lastly, *Improved Access for Students and Families* (8 % of the variance) includes four items with loadings between .46 and .94. Item loading on this factor assesses mental health promotion and supports possible through collaboration. The EFA for this scale reduced the original 24 items to 13. Eight items were eliminated based on low loadings, two for cross-loadings, and one to increase the reliability of the scale. Table 3 presents the 13 remaining items and the factor loadings from the principal factor analysis.

Descriptive statistics and internal consistency estimates (α) for each scale and its factors based on subscale scores are presented in Table 4. Each factor on the Types of Collaboration Scale was above the scale midpoint with the highest score found on the *Collaboration with Families* subscale. Factors on the Influences on Collaboration Scale were likewise above the scale midpoint with the highest score found on the *School Outreach to Communities and Families* subscale. Factors on the final scale, Perceived Benefits of Collaboration, were also above the scale midpoint with the highest score found on the *Improved Access for Children and Families* subscale. Respectable to very

Table 2 Items and factor loadings for the Influences on Collaboration Scale ($N = 199$)

	Factor			
	1	2	3	4
<i>Community mental health professionals who work in this school...</i>				
1. Are visible in the school	.75	.02	.09	-.14
2. Are consistent from year to year (i.e., there is little turnover)	.52	.03	.12	-.19
3. Have offices that are easily accessible to school staff	.65	.14	.12	-.22
4. Reach out to members of the school community	.77	.10	.02	-.10
5. Act like they belong in the school	.81	.09	-.01	-.05
6. Understand how the school operates	.66	-.11	.06	.24
7. Make an effort to build relationships with teachers	.71	-.05	.07	.07
8. Show up for after school or evening events at the school	.66	.05	-.02	-.17
9. Understand school policies and procedures	.62	-.11	-.08	.27
10. Support the collaboration of families and the school staff	.58	-.10	-.02	.27
<i>The principal of this school...</i>				
11. Supports community mental health professionals	.04	.72	-.06	.15
12. Communicates with community mental health professionals	.06	.81	-.06	.15
13. Advocates on behalf of community mental health professionals working in schools	.04	.84	-.10	.12
14. Arranges teacher/community mental health professional meetings	-.80	.80	.09	-.11
15. Trusts community mental health professionals	-.13	.76	-.02	.16
16. Communicates the importance of community mental health professionals to teachers	.09	.84	-.00	.03
17. Includes community mental health professionals in school leadership activities	.18	.71	-.09	-.01
18. Addresses students' mental health needs in meetings with teachers	-.05	.72	.08	.08
<i>School professionals and community mental health professionals in this school...</i>				
19. Respect each other	.11	-.18	.71	.17
20. Like one another	.11	-.18	.56	.22
21. Trust each other	-.07	-.06	.56	-.13
22. Frequently communicate with one another	.28	.13	.57	-.13
23. Understand each other's roles and responsibilities	.01	.03	.68	-.06
24. Share decision-making power	-.09	.20	.57	.03
25. Take supporting roles in one another's initiatives	.07	.06	.65	-.01
<i>This school...</i>				
26. Welcomes community involvement	.04	.03	.02	.73
27. Values partnerships with community agencies	.06	.16	-.03	.74
28. Actively builds partnerships with community agencies	.08	.17	.11	.62
29. Has a friendly environment	-.25	.12	.23	.61
30. Values family involvement	-.21	.08	.24	.59

good reliability (DeVellis, 2012) is indicated for each scale and its factors by Cronbach's α coefficients. Lastly, Table 5 presents items that were not retained by the EFA for each of the three scales.

Discussion

The aim of this study was to develop an instrument for measuring collaboration that explicitly examined the experiences of community-based mental health professionals working in schools as in expanded school mental health (ESMH; see Weist, 1997). This development of this

instrument also focused on addressing common challenges to measuring collaboration. The results of this study suggest that this instrument, the Expanded School Mental Health Collaboration Instrument [Community Version], has good psychometric properties, indicating potential use for evaluators, practitioners, and researchers interested in examining ESMH collaboration.

Scales and Factors

The Expanded School Mental Health Collaboration Instrument [Community Version] includes three scales and 59 items that measure multiple factors associated with

Table 3 Items and factor loadings for Perceived Benefits of Collaboration scale ($N = 199$)

	Factors		
	1	2	3
<i>During the past year, as a result of collaboration between school and community mental health professionals</i>			
1. Families are more involved in the school	.89	-.06	.00
2. Families feel more comfortable in the school	.87	-.02	-.02
3. Families are empowered in supporting their children's behaviors in school	.75	-.03	.03
4. Relationships between families and the school have improved	.79	.05	-.04
5. There is an increased focus on the holistic development of students	.30	.50	-.05
6. Mental health has become an integral part of daily school activities	.13	.49	.12
7. There are additional resources for helping students	-.09	.82	.02
8. There is increased mental health programming for students	-.06	.82	.02
9. There are more prevention services for students	-.08	.78	-.00
10. There are increased services for students in general education	.07	.59	-.01
11. Students have increased access to mental health services	-.10	.19	.70
12. Students are more willing to accept mental health services	-.09	-.07	.94
13. Families are more willing to accept mental health services	.06	-.10	.88

Table 4 Correlations, descriptive statistics, and internal consistency estimates (α) for ESMHCI [SV] scales and factors ($N = 199$)

	1.	2.	3.	4.
<i>Types of Collaboration</i>				
1. Collaboration with Community Mental Health Professionals	.89	.01	.31	
2. Collaboration with School Colleagues		.79	.12	
3. Collaboration with Families			.77	
<i>M</i>	2.98	3.02	3.50	
<i>SD</i>	.76	.58	.58	
<i>Influences on Collaboration</i>				
1. Outreach and Approach by Mental Health Professionals...	.90	.43	.53	.49
2. School Administrator Support		.94	.40	.20
3. Interpersonal Processes			.85	.53
4. School Outreach to Communities and Families				.88
<i>M</i>	2.93	2.81	2.91	3.08
<i>SD</i>	.51	.60	.42	.57
<i>Perceived Benefits of Collaboration</i>				
1. Improved Family–School Relationships	.88	.62	.53	
2. Increased Mental Health Programming		.86	.64	
3. Improved Access for Students and Families			.86	
<i>M</i>	2.74	2.77	3.09	
<i>SD</i>	.57	.59	.65	

The mean (M) and standard deviation (SD) statistics are based on subscale scores. Correlations in the upper diagonal reflect the relationships between the factors identified in the EFAs. All correlations are significant at $p < .05$. Internal consistency estimates (α) are presented on the diagonal in bold type

ESMH collaboration from the viewpoint of community-based mental health professionals. The first scale, Types of Collaboration, comprises three factors (i.e., *Collaboration with Community-Based Mental Health Professionals*, *Collaboration with School Colleagues*, and *Collaboration with*

Families) that describe the different forms of collaboration in ESMH. These three factors mirror those described in the broader literature (Bryan & Holcomb-McCoy, 2007; Mellin, 2009a) as well as those found in Phase I of this study (Mellin & Weist, 2011) and in the school version of the

Table 5 Items not retained by scale

Types of Collaboration

In my role as a community mental health professional, I

1. Participate in school leadership activities (e.g., school improvement planning) with other community mental health professionals
2. Deliver student mental health services (e.g., group counseling, classroom prevention activities) with school professionals
3. Coordinate efforts to increase family involvement in the school with school professionals
4. Intervene in student crises with families
5. Deliver student mental health services (e.g., group counseling, classroom prevention activities) with families
6. Coordinate efforts to increase family involvement in the school with families
7. Participate in school-based teams (e.g., student support, IEP) with families
8. Participate in school leadership activities (e.g., school improvement planning) with families

Influences on Collaboration

Community mental health professionals who work in this school...

1. Trust school professionals
2. Are considered “guests” in this school
3. Are embraced as members of the school community
4. Are included in school communications
5. Are familiar with the local community

The principal of this school...

6. Is consistent from year to year (i.e., there is little turnover)

School professionals and community mental health professionals in this school...

7. Have similar priorities
8. Experience turf issues
9. Use technology (e.g., text messaging, e-mail) to communicate

This school...

10. Does not trust families
11. Helps families feel comfortable in the school
12. Provides physical space for school professionals and community mental health professionals to meet
13. Has adequate funding to support partnerships with community agencies.
14. Provides time for school professionals and community mental health professionals to meet

Teachers in this school...

15. Trust community mental health professionals
16. Resist change
17. Seek out consultation from community mental health professionals
18. Believe partnerships with community mental health professionals are important
19. Have had positive previous experiences working with community mental health professionals
20. Find it necessary to work with community mental health professionals
21. Include community mental health professionals in communications involving shared students
22. Limit their interactions to other school professionals (e.g., teachers, school counselors, school psychologists)

Perceived Benefits of Collaboration

During the past year, as a result of collaboration between school and community mental health professionals

1. There are more consistent expectations for students
2. Students are less likely to “slip through the cracks”
3. Student behaviors have improved
4. There is more support for teachers
5. Teachers have a “safe” outlet for talking about their frustrations
6. Stress among teachers has decreased
7. School-employed mental health professionals can accomplish more
8. The quality of mental health services in the school has improved

Table 5 continued

Perceived Benefits of Collaboration

-
9. The school has implemented evidence-based programs
 10. There are fewer referrals to special education
 11. Referrals to special education are more appropriate
-

same instrument (Mellin et al., 2013). The first scale, *Collaboration with Community-Based Mental Health Professionals*, accounted for the majority of variance for both participants in the current study (28 %) and the sample of school professionals from the previous study (37 %; Mellin et al., 2013).

The second scale, *Influences on Collaboration*, includes four factors (i.e., *Outreach and Approach by Mental Health Professionals from Collaborating Agencies*, *School Administrator Support*, *Interpersonal Processes*, and *School Outreach to Communities and Families*) that describe facilitators and barriers to this work in ESMH. Each of these factors reinforces anecdotal accounts of Influences on Collaboration from the literature including the integration of community-based mental health professionals into the school community (Weist et al., 2012), how school and mental health professionals from collaborating agencies relate to one another (Mellin & Weist, 2011), and how welcoming schools are to partnerships with community-based organizations (Bryan & Holcomb-McCoy, 2007). Respondents also addressed these factors during Phase I of the study (Mellin & Weist, 2011) and mirror the factors on the school version of this same instrument (Mellin et al., 2013). For both school and community professionals, *Outreach and Approach by Mental Health Professionals from Collaborating Agencies* accounted for the largest amount of variance in the scale.

The third and final scale, *Perceived Benefits of Collaboration*, comprises three factors (i.e., *Improved Family–School Relationships*, *Increased Mental Health Programming*, and *Improved Access for Students and Families*) that suggest possible impacts associated with ESMH collaboration. These factors and items underscore anecdotal accounts of benefits associated with collaboration described in the literature including mediation of relationships between families and schools (Bickham et al., 1998), broader range of services available (Elias et al., 1997; Weist et al., 1999), and both improved attitudinal and physical access to services (Nabors et al., 2000). The school version of this same instrument includes one additional scale that did not emerge for community-based mental health professionals, *Support for Students and*

Teachers. This factor, which also accounted for the largest amount of scale (48 %) variance among school respondents, considers how students and teachers might experience increased assistance as a result of ESMH collaborations. Comparatively for community-based mental health professionals, *Improved Family–School Relationships* accounted for a majority of the scale variance (48 %). Through enhanced collaboration, clinicians from community agencies viewed collaboration with school staff as a key step for linking families and schools. This finding is complementary to findings on the School version of the scale, wherein through collaboration with community clinicians, school staffed perceived improved relationships with families.

Limitations

Before discussing the potential implications of this study for research and practice, it is important to understand the results in the context of the study's limitations. There are three primary limitations to this study. First, this study used a small, self-identified, and voluntary sample of community-based mental health professionals who are included on the Center for School Mental Health's e-mail distribution list. It is possible that this sample differs in important ways from other community-based mental health professionals and may not represent a broader range of experiences with ESMH collaboration. Community-based mental health professionals who have joined this particular listserv, for example, could have stronger or more positive connections to ESMH and may not represent the perspectives of professionals with weaker ties to this field. Additional research with larger and more diverse samples is necessary for ongoing development of this instrument. Second, test–retest reliability and other forms of validity (i.e., convergent, divergent, external, and clinical) were not assessed in this study. Given the challenges to measuring collaboration (see Lemieux-Charles & McGuire, 2006; McIntosh et al., 2008; Thomson, Perry, and Miller, 2007), future research that explicitly examines the test–retest reliability and other forms of validity for this instrument are encouraged. Lastly, additional data collection to support confirmatory

factor analyses (CFAs) of the *Expanded School Mental Health Collaboration Instrument [Community Version]* is necessary to sharpen understanding of important elements of ESMH collaboration. Notwithstanding these limitations, the results of this study suggest that the *Expanded School Mental Health Collaboration Instrument [Community Version]* is a valid and reliable tool for practitioners and researchers interested in measuring ESMH collaboration from the perspective of community-based mental health professionals.

Implications for Practice and Research

The Expanded School Mental Health Collaboration Instrument [Community Version] is a new measure that needs further psychometric development before it is ready for formal measurement use; however, we believe that it can add immediate value to the field. The ESMHCI [Community Version] can contribute to the trend of interconnected research and practice by informally supporting practitioners and researchers who are interested in measuring ESMH collaboration from the perspective of community-based mental health professionals. This version of the instrument can be used independently or paired with the school version to allow for comparing and contrasting of perspectives. Here, suggestions for both practice and research are offered.

Practitioners can use the Expanded School Mental Health Collaboration Instrument [Community Version] as an informal tool for establishing and maintaining ESMH collaborations. Community-based mental health administrators, for example, could consider items in this instrument in the process of establishing collaborative relationships with schools. Items such as “*Community mental health professionals who work in this school have offices that are easily accessible to school staff*” and “*The principal of this school communicates the importance of community mental health professionals to teachers*” could be instrumental guidelines in the process of planning collaborative relationships with schools. The Expanded School Mental Health Collaboration Instrument [Community Version] could also be used a tool for program evaluation. Administered at regular intervals with results aggregated and distributed to respondents, this instrument could provide valuable feedback about the strengths and challenges of ESMH collaboration with higher scores representing areas of strength and lower scores as areas for improvement.

Interestingly, both the School and Community Staff version of the instrument focus on measuring collaboration, and we believe that their use could actually serve to increase collaboration between school- and community-based practitioners in improving programs to reduce barriers to learning among students. For example, with both

groups participating in teams focused on improving ESMH services (see Markle, Splett, Maras, & Weston, 2014), and education staff completing the School Version and community staff completing the Community Version could result in a process (that we recommend) of the two groups reviewing findings and themes from the measure together, and based on these findings matched to experiences in the school, planning for quality improvement of efforts to improve student emotional/behavioral functioning (see Weist et al., 2007).

Researchers interested in ESMH collaboration may also find this instrument constructive to their work. Further examination of the relationships among the factors across scales in the instrument could provide research-based suggestions for practice. Better understanding of how one factor relates to another could provide important advancements for maximizing ESMH collaboration and/or understanding what types of collaborations are associated with perceived benefits. In this way, researchers may continue to build theory that suggests new paths for understanding the relationship between collaboration and child-level outcomes. Researchers could also use the Expanded School Mental Health Collaboration Instrument [Community Version] to measure changes associated with practice interventions designed to improve ESMH collaboration. Given at baseline, during, and after the intervention, for example, researchers could begin to test specific approaches for strengthening ESMH collaboration that would represent a valuable contribution to the field. Lastly, items from this instrument could be used to build a survey for social network analysis (SNA) of a bounded collaboration. Items from the *Influences on Collaboration* scale could be used along with names of specific collaborators in a matrix, for example, to identify important predictors of collaboration such as trust, visibility, and valuing of partnerships. SNA, given its ability to measure interdependent relationships between groups of people instead of inferring relationships from aggregated data, is an important methodology for advancing research in this area, and items from this scale could be used to build necessary tools for this type of analysis.

Further, in developing conceptual frameworks to iteratively improve ESMH services based on the evolving research base, effective collaboration between school- and community-based staff may prove to be an important variable, in relation to potential mediating effects. Findings from participants in Phase 1 (Mellin & Weist, 2011) of this study did not suggest a direct path between collaboration and child-level outcomes. Instead, participants focused on factors that likely mediate the relationship between collaboration and child-level outcomes such as reduced teacher stress or improved access to services. For example, implementing a particular evidence-based program may or

may not lead to enhanced student outcomes depending on staff collaboration in implementing it. Thus, the School and Community versions of this instrument may assist in informing these conceptual frameworks, while also increasing analytic options to advance ESMH of high applied significance.

Conclusion

Expanded school mental health (ESMH) centers on collaboration between community-based mental health professionals and school professionals (Weist, 1997). Despite clearly articulated challenges to collaborative practice between these two groups of professionals including fundamental differences in theoretical orientation, basic terminology, and professional territory (Waxman et al., 1999; Weist et al., 2012) in addition to real training needs for collaborative work (Ball et al., 2010), little research is available for supporting ESMH collaboration. Few instruments for measuring ESMH collaboration (Mellin, 2009a) in addition to tools that specifically assess the experiences of community-based mental health professionals contribute to the dearth of research in this area. This study aimed to develop and examine the psychometrics of a new instrument for measuring ESMH collaboration from the perspectives of community-based mental health professionals. The initial psychometrics suggest that the Expanded School Mental Health Collaboration Instrument [Community Version] is a valid and reliable instrument that can be used alongside the school version by practitioners and researchers interested in exploring ESMH collaboration. Additional research is needed to establish other types of validity, test–retest reliability, as well as to confirm the factors in the model.

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