

## RESEARCH ARTICLE

# Teacher training in K–12 student mental health: A systematic review

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## Abstract

Teachers are in a unique position to identify and support students who experience mental health concerns. The purpose of this systematic review was to (a) identify current available evidence-based teacher training programs related to students' mental health, (b) review the content and delivery methods of the training, and (c) evaluate the quality of the research designs and evaluation methods of the training. Most training programs are delivered face-to-face and include interactive discussion and content knowledge. Content varied among the training programs. Most studies found improved knowledge among teachers; however, no studies found improvement in effective communication.

## KEYWORDS

student mental health, systematic review, teacher training

## 1 | INTRODUCTION

The need for mental health services for school-age children appears to be on the rise (Capp, 2015) with an estimated 20–25% of children experiencing a mental health disorder each year in the United States (Bains & Diallo, 2016). When students' mental health concerns are not treated, their academic performance decreases and involvement in the juvenile justice system and future unemployment increases. Children often do not have access to mental health care in the community and depend on services in the school setting (Adelman & Taylor, 2010; Bruhn, Woods-Groves, & Huddle, 2014). Addressing mental health concerns in school is important due to the strong link between students' academic progress and their mental well-being (Borntreger & Lyon, 2015). As a result, school-based mental services have recently been expanded and include initiatives such as response to intervention, positive behavioral interventions and supports (PBIS),

and the interconnected system's framework (Hoover, Baca, Wexler-Love, & Saenz, 2008; Weist, Eber, & Horner, 2018).

Teachers spend a significant amount of time with students and are in a unique position to identify and help support those who experience mental health concerns (Johnson, Eva, Johnson, & Walker, 2011). In addition, teachers often play an integral role in supporting comprehensive school-based mental health services. Franklin, Kim, Ryan, Kelly, and Montgomery (2012) found that teachers are involved in school-based mental health programs 40% of the time. Some examples of teacher activities include collaborating with school mental health teams, implementing Tier 1 interventions within PBIS (e.g., social skills training), classroom management practices to promote positive student outcomes (von der Embse, Kilgus, Eklund, Ake, & Levi-Neilsen, 2018), and implementing social and emotional learning curriculums. However, teachers report a lack of training on how to address student mental health in the classroom (Osagiede et al., 2018) and often struggle to effectively refer students who have emotional and behavioral health concerns (Eklund & Dowdy, 2014). Specifically, schools appear to have challenges identifying students who experience internalizing concerns such as anxiety and depression (McIntosh, Ty, & Miller, 2014).

Despite teachers' role in supporting students' mental health, training in this area is not explicitly addressed in preservice teacher education programs (Council for Accreditation of Educator Preparation, 2015). Teachers typically rely on in-service professional development to enhance their knowledge of student mental health. Teacher training programs related to student mental health tend to focus on areas such as early identification and referral processes (von der Embse, Kilgus et al., 2018; von der Embse, Rutherford, Mankin, & Jenkins, 2018), or content knowledge (Kutcher et al., 2016). Training programs may also focus on a specific type of mental health concern (e.g., attention deficit hyperactivity disorder [ADHD], depression). In addition, there are various formats for training such as full or half-day workshops, courses, or online training programs. As school-based mental health services continue to expand (Weist et al., 2018), teachers will play a critical role in supporting students' mental health needs. Thus, it is important for teachers to receive effective training in student mental health to support school mental health initiatives. Teachers' professional development is successful when the training is: (a) content-focused, (b) incorporates active listening, (c) collaboration, (d) utilizes models of effective practice, (f) includes coaching, (g) offers feedback, and (h) engages in reflective practice. Without these elements, teachers are not actively engaged in the teaching practice and not allotted the space to become more effective educators (Darling-Hammond, Hyler, & Gardner, 2017). Furthermore, professional development and training that are embedded in the work environment and enables teachers to actively engage in skill-building are more likely to translate into classroom practice (Minor, Desimone, Lee, & Hochberg, 2016). State departments of education, school districts, or university faculty may be involved in providing teacher training in student mental health and need information on effective practices. Therefore, the purpose of this systematic review was to (a) identify current available evidence-based teaching training programs related to students' mental health, (b) review the content and delivery methods of the training, and (c) evaluate the quality of the research designs/evaluation methods of the training.

## 2 | METHOD

In this systematic review, we examined intervention studies (i.e., controlled intervention studies, pre/post, no control studies, and program evaluations) related to teacher training in student mental health. We conducted this review in February 2019 and used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher, Liberati, Tetzlaff, Altman, & PRISMA Group, 2009). We followed the following PRISMA procedures (Moher et al., 2015): (a) established study eligibility criteria, (b) identified information sources, (c) developed a search strategy, (d) completed the selection process for studies, (e) collected data from each study (e.g., participants, intervention, comparison, and outcome [PICO]; training components), and (f) used a quality assessment to evaluate the validity of the findings of each study. We searched the following databases for this review: Academic Search Complete, Education Resources Information Center (ERIC), Education Source, Psych Info,

Psych Articles, and Psychology and Behavioral Sciences. The search years for this review included all peer-reviewed articles from 1909 to 2018. The search terms used were: Teacher training, student, and mental health.

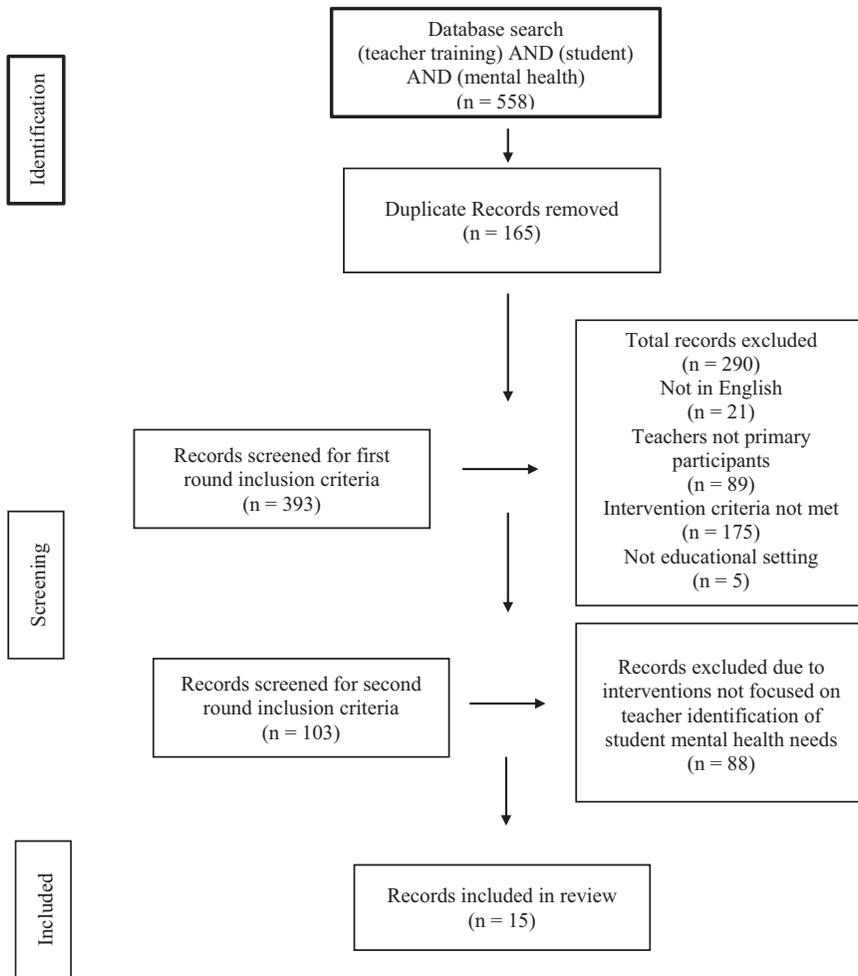
## 2.1 | Identification of relevant studies and study selection and eligibility criteria

Our initial search through the databases yielded 558 articles including duplicates. After removing 165 duplicate articles, we identified 393 articles for review. We then equally divided the 393 articles among all six team member-pairs reviewing titles and abstracts to ensure the articles met the first round of inclusion criteria. The team members were paired to review the articles to reduce confusion on the funneling of relevant articles and to engage in interrater reliability to ensure consistency and a form of consensus during this process. Any confusion or debate that could not be agreed upon between the pairing was then brought to the group for discussion. This pair and group process continued through each round of review. The first round of inclusion criteria included: (a) The article needed to be in English, either original work or translated; (b) teachers were the primary participants or focus of the intervention; (c) the study needed to include an intervention that addressed teachers' ability to address students' mental health concerns; and (d) the intervention needed to be conducted or used in an educational setting. During this round, we thoroughly reviewed the article titles and abstracts. On completion of the first round of review, 103 articles were found to meet the first level of inclusion criteria. The second round of review included reviewing the methods sections of the articles and one additional criterion was added: The intervention outcome specifically focused on outcomes for teachers' ability to work with students' mental health needs (i.e., not focused on the teachers' personal mental health). On completion of the second review and additional inclusion criterion, 15 articles fit all five initial inclusion criteria and were included in the review.

On the basis of the first two reviews, we excluded all articles that were not in English, all qualitative studies on teachers' experiences with mental health concerns in the classroom, articles that focused on student training rather than teacher training, and articles that did not include an intervention specifically focused on improving teachers' abilities to address student mental health needs. The studies we included in the review consisted of intervention studies focused on improving K–12 teachers' abilities to identify and manage student mental health concerns conducted either through a control group comparison or a pre/posttest evaluation. Specific elements, quality of the studies, and the components of the interventions of each study were further examined. We outline our search process in Figure 1.

## 2.2 | Quality assessment

The third phase of our review process included a quality assessment of each of the studies. We completed the assessments in pairs to reduce confusion, bias, and to engage in interrater reliability. To assess quality, we used quality assessment tools for controlled intervention studies and pre/posttest, no control studies created by the U.S. Department of Health and Human Services, more specifically the National Heart, Lung, and Blood Institute (U.S. Department of Health and Human Services and National Heart, Lung, and Blood Institute; <https://www.nhlbi.nih.gov/health-topics/study-quality-assessment-tools>). We modified the wording within the quality assessment tools to better fit with teacher education literature and research designs more commonly used in the education field compared with the medical field. For the quality assessment tool used for the controlled intervention studies, we included randomization of groups, classrooms, and schools as acceptable randomization adequate randomization criteria of the quality assessment tool. In addition, we excluded the intention-to-treat analysis criteria noted on the quality assessment tool as this is not commonly reported in education literature. Finally, for both the controlled intervention and pre/posttest quality assessment tools, the research team exempted the criteria examining the use of blinding participants so it did not influence the quality assessment tool as it is often considered “not applicable” in education intervention literature.



**FIGURE 1** Article search process

## 3 | RESULTS

### 3.1 | Study selection

Overall, we identified 393 articles from the initial search after the removal of duplicate articles using the following academic databases: Academic Search Complete, Education Resources Information Center (ERIC), Education Source, Psych Info, Psych Articles, and Psychology and Behavioral Sciences. Articles were excluded due to language, replication, and nonintervention studies. Furthermore, studies not focused on teachers as the primary participant or interventions were not completed in an educational setting resulting in 103 articles. Finally, after completing our last review, we identified 15 articles based on intervention studies related to teacher training addressing student mental health needs in the classroom. Next, we reviewed the studies using a quality assessment tool. Table 1 includes the 15 identified articles and a summary of the study framework; design, setting, timeframe, and the experimental or quasi-experimental nature of the study. The study characteristics of the final articles selected are outlined in Table 2, including PICO.

**TABLE 1** Article summaries

| Article | First author | Year | Design                        | Setting                       | Timeframe | Quality assessment tool | Quality assessment score |
|---------|--------------|------|-------------------------------|-------------------------------|-----------|-------------------------|--------------------------|
| 1       | Atkins       | 2003 | Between-subject control group | School                        | 3 years   | Controlled              | Fair                     |
| 2       | Barbaresi    | 1998 | Pre/posttest                  | School                        | 2.5 hr    | No control              | Good                     |
| 3       | Baum         | 2009 | Program evaluation            | School                        | 2 years   | No control              | Poor                     |
| 4       | Eustache     | 2017 | Mixed-methods                 | School                        | 2.5 hr    | No control              | Good                     |
| 5       | Froelich     | 2012 | Within-subject control group  | School                        | 18 weeks  | Controlled              | Good                     |
| 6       | Hussein      | 2013 | Pre/posttest                  | School                        | 2 days    | No control              | Good                     |
| 7       | Jorm         | 2010 | Cluster randomized trial      | School                        | 2 days    | Controlled              | Good                     |
| 8       | Kirchner     | 2000 | Pre/posttest                  | School                        | 9 months  | No control              | Fair                     |
| 9       | Kutcher      | 2013 | Program evaluation            | School                        | 3 days    | No control              | Fair                     |
| 10      | Kutcher      | 2016 | Pre/posttest                  | School                        | 3 days    | No control              | Fair                     |
| 11      | Lasiri       | 2018 | Randomized control trial      | Primary Schools in Nigeria    | 2 weeks   | Controlled              | Good                     |
| 12      | Moor         | 2007 | Randomized control trial      | High Schools in Scotland      | 2 hr      | Controlled              | Good                     |
| 13      | Moor         | 2000 | Pre/posttest                  | Secondary Schools in Scotland | 2 hr      | No control              | Poor                     |
| 14      | Powers       | 1995 | Pre/posttest                  | School                        | 2 hr      | No control              | Good                     |
| 15      | Vieria       | 2014 | Case-control/longitudinal     | High School in Brazil         | 2 weeks   | Controlled              | Good                     |

Note: Good rating—Low risk of biases (selection, information, measurement biases) and strong internal validity; fair rating—Low/moderate risk of biases and moderate internal validity; poor rating—strong risk of biases and low internal validity. (Atkins, Graczyk, Frazier, & Abdul-Adil, 2003).

### 3.2 | Quality assessment

The agreeance of quality assessments among the raters across all articles was 14 of 15 (93.3% agreeance). When there was disagreement within rating teams, we discussed the article quality assessment among the whole team until we came to a consensus on quality rating. After completing the quality assessment tools for each study and discussing between pairs, we rated nine articles as “good” quality, four articles as “fair” quality, and two articles as “poor” quality. The ratings were based on the methodological information provided in the article. The studies rated as “poor” did not include various elements of their corresponding research designs within the written manuscript such as enough participants for adequate power, utilizing different measurement systems pre/posttest, no reported psychometric properties of measurement instruments or limited data analysis procedures reported.

### 3.3 | Primary content areas

Across the identified studies, several areas of mental health were covered to support teachers' ability to recognize mental health concerns in the classroom. A common component of the training included an overview of major mental health disorders that are prevalent among children and adolescents to increase mental health literacy. As outlined in Table 3, six of the included studies were an overview of several diagnosis such as ADHD, depression, anxiety, or behavioral disorders (Eustache et al., 2017; Hussein & Vostanis, 2013; Jorm, Kitchener, Sawyer, Scales, & Cvetkovski, 2010; Kutcher et al., 2016; Kutcher, Wei, McLuckie, & Bullock, 2013; Powers, Wegmann, Blackman, & Swick, 2014). Other studies were specific to one diagnosis such as depression (Kirchner, Yoder, Kramer, Lindsey, & Thrush, 2000; Moor et al., 2007, 2000), oppositional defiant disorder (ODD; Froelich, Breuer, Doepfner, & Amonn, 2012), or substance abuse (Moor et al., 2007). The goal of reviewing specific disorders, was to increase teachers' understanding of signs, symptoms (Eustache et al., 2017; Kirchner et al., 2000; Moor et al., 2007, 2000; Powers et al., 2014), diagnosis criteria, and screening tools (Vieira, Gadelha, Moriyama, Bressan, & Bordin, 2014) specific to those particular disorders. When covering the diagnosis, the developmental aspect of the behavior and diagnosis was included to identify the age-appropriate behaviors, learning capabilities, and how to differentiate between normal and abnormal developmental characteristics.

Across training, primary components included early detection, signs, symptoms, and mental health literacy through varying approaches. Three pieces of training focused specifically on depression among children and adolescents and its manifestation in the classroom. One study (Kirchner et al., 2000) offered a 1-day course of “Depression in the Classroom” that included a didactic segment of pathology, epidemiology, interventions and crisis management strategies resulting in an increase in the teachers' ability to respond and refer the student to the appropriate services. Moor et al. (2000, 2007) sought to evaluate the effectiveness of school-based psychoeducational interventions on the teachers' abilities to recognize depression by matching teacher referrals with diagnosed students. However, the outcomes of these two studies differed significantly. The initial study (Moor et al., 2000) included 15 participants overall but when the second study evaluated a larger scale of 151 teachers (Moor et al., 2007), there were no improvements in ability. Another training focused on ODD (Froelich et al., 2012) and included both theoretical and practical discussions of the teachers' current students. However, regardless of the approach towards increasing teachers' abilities to recognize symptoms, no training showed a significant effect on teachers making accurate diagnoses and referrals. Overall, teachers reported sharing information they learned with colleagues and higher levels of confidence in mental health literacy but did not demonstrate a significant improvement in their ability to accurately identify students with depression.

ADHD was a common focus area for over 20% of the training reviewed. Unlike other focus areas, ADHD training consisted of information regarding symptoms, behavioral interventions, and classroom management strategies. Furthermore, when considering an ADHD focus area, teachers were more likely to find highly regarded colleagues as more influential than community mental health professionals (Froelich et al., 2012). It is likely that

**TABLE 2** Study characteristics

| Article | First author | Participants   | Intervention                           | Comparison             | Outcome   |
|---------|--------------|--|--|------------------------|---|
| 1       | Atkins       | Fourth-grade teachers/students with ADHD in six schools    | Classroom management                   | N/A                    | Significant increase in the use of strategies   |
| 2       | Barbaresi    | 44 Elementary school teachers                              | ADHD training and classroom management | N/A                    | Significant increase in ADHD knowledge; reduced teacher stress                                  |
| 3       | Baum         | Facilitators, teachers, school mental health professionals | Trauma training                        | N/A                    | Significant increase in trauma knowledge and teacher efficacy in managing student mental health |
| 4       | Eustache     | 22 Teachers  | Mental health training                 | N/A                    | Increase in mental health knowledge and improved attitudes                                      |
| 5       | Froelich     | 16 Teachers  | Classroom management                   | Control group          | Significant effects on ADHD and ODD symptoms; improved behavior management                      |
| 6       | Hussein      | 114 Primary school teachers; 5 schools                     | Mental health training                 | N/A                    | Improved knowledge, ability to identify signs and symptoms, and respond                         |
| 7       | Jorm         | 7 High schools   | Mental health first aid training       | 7 Waitlisted schools   | Increased knowledge and self-efficacy; reduced stigma; shifted treatment beliefs                |
| 8       | Kirchner     | 62 Teachers; 21 Schools                                    | Depression training                    | 46 Matched pairs       | Significant increases in teacher identification and the ability to respond, intervene and refer |
| 9       | Kutcher      | 79 Teachers  | Mental health curriculum training      | N/A                    | Significant increase in knowledge and attitudes   |
| 10      | Kutcher      | 37 Secondary teachers                                      | Mental health curriculum training      | N/A                    | Decreased stigma; increased knowledge and identification  |
| 11      | Lasisi       | 84 Primary school teachers                                 | ADHD training; behavior management     | Control group          | Significant increases in knowledge lowered negative attitudes                                   |
| 12      | Moor         | 151 Teachers   | Depression training                    | Waitlist control group | No improved ability to identify depression  |
| 13      | Moor         | 16 School counselors and teachers                          | Depression training                    | Control group          | Increased awareness and knowledge, ability to identify  |
| 14      | Powers       | 157 School district employees                              | Mental health training                 | N/A                    | Increased knowledge, social validity endorsed   |
| 15      | Vieria       | 36 Teachers  | Mental health training                 | Control group          | Some increased identification   |

Abbreviations: ADHD, attention deficit hyperactivity disorder; ODD, oppositional defiant disorder.

**TABLE 3** Training components

| Article | First author | Primary focus; content  | Training activities   | Means of delivery | Location   | Implementers/credentials   |
|---------|--------------|---|---|-------------------|------------|--|
| 1       | Atkins       | ADHD; classroom management/behavior management interventions  | Interviews; small groups; contact with community consultants; home visits                                       | Web-based         | N/A        | Mental health staff from community agencies  |
| 2       | Barbareis    | ADHD; signs and symptoms; classroom management strategies   | Information; interactive case studies   | Face-to-face      | School     | Two trainers   |
| 3       | Baum         | Trauma and resilience; signs and symptoms   | Experiential activities; skills practice of classroom management  | Face-to-face      | School     | Trained mental health professionals  |
| 4       | Eustache     | Mental health disorders; recognize, response, referral, resilience  | Didactic presentations; interactive discussions; role plays   | Face-to-face      | School     | Mental health practitioners  |
| 5       | Froelich     | ADHD; ODD; etiology, signs, symptoms, assessment, treatment; behavior management                                | Theory discussion; practical discussion   | Face-to-face      | School     | Child and adolescent psychiatrists   |
| 6       | Hussein      | Child and mental health disorders; child development; identification; protective factors; relationship building | Interactive; video clips; handouts; role plays; small group exercises; case vignettes                           | Face-to-face      | School     | Child and adolescent psychologists   |
| 7       | Jorm         | Mental health crises; policy; common disorders; intervening with students                                       | Didactic presentations; interactive discussions   | Face-to-face      | School     | Instructors from the Department of Education, Children's Services.                                   |
| 8       | Kirchner     | Depression; etiology; identification of signs and symptoms; referral; how to teach students about depression    | Didactic training; interactive components with video; small and large group discussion; lecture; case vignettes | Face-to-face      | University | Psychiatry Faculty   |
| 9       | Kutcher      | Mental health, mental health curriculum implementation training   | Self-study; support for delivery  | Face-to-face      | School     | National mental health organization; mental health experts   |
| 10      | Kutcher      | Mental Health Literacy  | Six training modules; classroom activities, study guides, self-evaluations                                      | Face-to-face      | Tanzania   | Mental health experts: psychiatrist, a psychologist, and a social worker. Four mental health experts |

TABLE 3 (Continued)

| Article | First author | Primary focus; content   | Training activities  | Means of delivery | Location                                     | Implementers/credentials |
|---------|--------------|--|--|-------------------|--|--------------------------|
| 11      | Lasisi       | ADHD   | PowerPoint, clinical vignettes, role plays, small group discussions, and videos. | Face-to-face      | Primary schools in Kaduna, northwest Nigeria | Manuscript author        |
| 12      | Moor         | Recognize the symptoms of depression in adolescent students    | Videos and discussion  | Face-to-face      | Secondary schools in Scotland                | Manuscript authors       |
| 13      | Moor         | Knowledge of depression in adolescents                         | Workshop; case vignettes, discussion, presentation                               | Face-to-face      | Secondary school setting                     | Manuscript authors       |
| 14      | Powers       | Increase awareness of mental health issues; referral processes | 2-hr; PowerPoint presentation  | Face-to-face      | High school auditorium                       | Not reported             |
| 15      | Vieria       | Trauma; identification of symptoms and classroom management    | Professional development presentation  | Face-to-face      | Elementary school                            | Not reported             |

Abbreviations: ADHD, attention deficit hyperactivity disorder; ODD, oppositional defiant disorder.

teachers find the experience of the teachers to be more beneficial or relatable than mental health professionals who are not experienced in the classroom environment.

### 3.4 | Training modalities and implementation

Fourteen of the fifteen trainings were facilitated face-to-face in a school setting by facilitators who trained the teachers using a variety of passive and interactive activities (see Table 2). The majority included didactic training or presentations by the implementers at some point in the training, beginning with a presentation of the content in the form of a lecture. Many utilized videos of students with the primary focus concerns in order for educators to see examples of identifiable symptoms or concerns. Following the lecture, videos, and/or discussion, teachers used roleplays for skills practice. A commonality across training was the use of case vignettes or case studies to test participants' knowledge, followed by small or large group discussions. Some of these case studies/vignettes involved the use of actual students from the teachers' schools, who were assessed and met the criteria for the diagnoses discussed in the training. The ability of the teachers to identify students in need of a referral for mental health services served as the indicator of whether or not the training activities were successful. Two of the studies involved participants training and assessing themselves using modules and guides (Kutcher et al., 2016; Kutcher et al., 2013).

Out of the 15 trainings reviewed, 10 resulted in increased knowledge and mental health literacy for the participants (see Table 3). Whether the training was on a specific diagnosis or a range of commonly encountered mental health concerns, these studies found teachers reporting and demonstrating an increased ability to understand and identify the symptoms and syndromes being discussed in the training. Out of the 15, 5 trainings saw an increase in not only knowledge but also skill in intervention and referral for appropriate services. Only one training resulted in no significant change in the participants' ability to recognize signs and symptoms (Moor et al., 2007). Regarding the efficacy of face-to-face versus web-based training, one web-based training reported an increase in skill and use while the other saw an increase in knowledge. The reported effectiveness of this training was similar to reports from the effective face-to-face training.

Training were conducted by a variety of professionals ranging from mental health professionals, researchers, education consultants, and former educators. Mental health professionals consisted of psychiatrists, psychologists, practitioners, and social workers while researchers were primarily academic faculty across disciplines (i.e., education, medicine, and mental health). Powers et al. (2014) conducted a pilot study where faculty in social work to provide teachers with information on the seven most common mental health concerns in children. Although the outcome of the study was overall positive and indicated an increase in knowledge of child mental health concerns, the authors suggested replication of their pilot study to ensure that the effects were persistent (Powers et al., 2014).

Cultural perspectives and implementation are noted throughout the studies reviewed. One study utilized research professionals from the medical discipline to which teachers reported the medical model of depression was a difficult framework to accept based on their cultural perspectives of depression being a religious and moral issue (Moor et al., 2007). However, another study based in the southern region of the United States utilized psychiatrists as their training implementers using the biological and medical model to which resulted in a significant increase in teacher identification and ability to respond, intervene, and refer (Kirchner et al., 2000).

## 4 | DISCUSSION

In this systematic review, we found that outcome results varied across content areas, training modality, and training facilitation. Many training programs focused on a specific diagnosis or mental illness commonly seen

in children and adolescents such as ADHD, depression, anxiety, or behavioral disorders (e.g., oppositional defiant disorder or conduct disorder) in hopes of increasing mental health literacy. Training focused on signs, symptoms, and diagnosis criteria covered significant content areas, yet outcomes for improving symptom recognition varied (Kirchner et al., 2000; Kutcher et al., 2016, 2013; Moor et al., 2007, 2000; Vieira et al., 2014). Mental health professionals experienced an increase in referrals however, teachers were more likely to identify distressed students rather than students with mental illness (Moor et al., 2007). Studies aiming to improve teachers' knowledge of mental health showed significant increases in knowledge, attitudes, mental health literacy, and a decrease in stigma (Barbarese & Olsen, 1998; Baum, Rotter, Reidler, & Brom, 2009; Eustache et al., 2017; Hussein & Vostanis, 2013; Jorm et al., 2010; Kutcher et al., 2016; Lasisi, Ani, Lasebikan, Sheikh, & Omigbodun, 2017; Powers et al., 2014). Furthermore, in one study, as many as 90% of teachers were more likely to share the information they gained from the training with a colleague after the training (Moor et al., 2007).

The training utilized a variety of methods and activities to present information to teachers and assess their ability to apply their knowledge and skills gained in the training. Previous scholars have attributed to successful changes in practice results from job-embedded professional development (Minor et al., 2016); however, no treatment outcomes described in the studies were directly attributed to the delivery method of the training. The duration of the studies varied from one training day for several hours to several years of data collection. Nevertheless, there is a significant gap in follow-up and longitudinal studies as many of the studies collected data immediately after the training. Many schools experienced a decrease in implementation after initial trainings (Noell et al., 2005), which is consistent with recommendations for job-embedded professional development to include coaching and expert support to sustain skill development (Darling-Hammond et al., 2017) and implementation in the "real world" setting (Barnes, 2019). Therefore, longitudinal and follow-up studies are necessary for further investigation of effectiveness.

Effective teacher trainings in mental health could lead to an increase in resources and a need for mental health training to be incorporated into formal education for preservice teachers (Hussein & Vostanis, 2013; Powers et al., 2014). There is a lack of required mental health training for educators, despite the fact that teachers are spending a significant amount of time with students and the prevalence of students with mental health concerns (Hussein & Vostanis, 2013; Powers et al., 2014). Future training considerations include integrating mental health literacy into preservice education programs to prepare preservice teachers to recognize and respond to presenting mental health issues in the classroom. Additional training considerations include incorporating experiential activities, follow-up coaching, and the use of both experts and field practitioners to embed the training into the work environment (Darling-Hammond et al., 2017; Minor et al., 2016).

Although many schools have some specific mental health staff, such as school psychologists or school counselors, Moor et al. (2007) noted that teachers are often the front-line personnel and are heavily relied on to identify at-risk students. They suggest that a key to improving teacher recognition of students at risk for developing mental health concerns lies not only in education, but changing teacher attitudes toward mental health as well (Moor et al., 2000). Teachers often have significantly more face-to-face contact with the students in need of treatment than the mental health professionals within the school. One aspect that appeared to be missing from the training was a focus on communication skills for teachers when interacting with students who have mental health concerns. Communication may be a key component of inviting students to discuss their concerns and helping them be receptive to receiving help. Therefore, providing teachers with knowledge, skills, and support in recognizing and referring students to appropriate resources within the school could lead to increased overall mental health support for students in the school setting. Furthermore, utilizing education colleagues within the training rather than community mental health experts or scholars is seen as having more influence among the participating teachers (Froelich et al., 2012). Future training could utilize facilitators with a background in education to connect with the teachers on a practitioner level with an understanding of the dynamics and challenges presented in the classroom.

## 5 | LIMITATIONS

This search was limited to intervention studies that have been published in peer-reviewed journals. Therefore, commercially marketed training programs were not included in the review as those studies have not been published in peer-reviewed journals. Another limitation to consider is that much of the current literature consists of program evaluation studies that only include the perceptions of the participants. Although we excluded evaluation studies that lacked pretest and posttest analyses from our review, there may be merit to the approaches in the studies that could be utilized for future research. In addition, we acknowledge that the nature of the topic makes it difficult to study using traditional research methods. For example, schools would likely prefer that all teachers receive professional development as opposed to allowing for a treatment and control group. Furthermore, there was significant variance in the outcomes measured, within various studies. Thus, it is difficult to make broad conclusions about training effectiveness.

## 6 | CONCLUSION

Teachers play a critical role in addressing K-12 students' mental health. School districts and teacher preparation programs may benefit from knowledge of the most effective training programs. Although most of the training in our review was delivered face-to-face, it is likely that web-based and virtual training will become more prevalent as technology advances. Web-based and online training modalities may be more cost-effective and could be delivered more efficiently to a larger number of teachers. It will be important to evaluate the effectiveness of the different training modalities in the future. Further research and reviews are needed to identify the most effective content, formats, and delivery methods to prepare teachers to help support students' mental health needs.

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