Applying human-centered design to maximize acceptability, feasibility, and usability of mobile phone supervision in Kenya: A mixed methods pilot study

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Abstract

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Opportunities exist to leverage mobile phones to replace or supplement in-person supervision of evidence-based practices (EBPs) for mental, neurological, and substance use disorders in lower-resource settings. However, contextual variables must be considered and addressed.

Using an iterative and mixed methods approach, we co-designed implementation guidelines to support the use of mobile phone supervision with lay counselors and supervisors delivering a culturally adapted Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) in Western Kenya. Guided by human-centered design methods, we first aimed to understand how mobile phones were used when supervising lay counselors, determine the acceptability and feasibility of mobile phone supervision, and generate solutions to improve mobile phone supervision in individual

semi-structured interviews. These results informed the development of mobile phone supervision implementation guidelines. Making use of a stepped-wedge cluster-randomized trial design, counselors receiving tailored implementation guidelines were compared to counselors from a previous sequence that did not receive guidelines. All counselors responded to measures of acceptability, feasibility, and usability of mobile phone supervision. A subset of counselors that received guidelines and all supervisors also participated in semi-structured interviews to understand how the guidelines and support impacted their use of mobile phone supervision. Results from the design phase highlighted several distinct uses of mobile phones by lay counselors and supervisors as well as important considerations for the acceptability and feasibility of mobile phone supervision. Lay counselors and supervisors generated 27 distinct strategies to increase the acceptability and feasibility of mobile phone supervision. The resulting support significantly improved mobile phone supervision acceptability and usability. Qualitative interviews with lay counselors and supervisors contextualized how the guidelines impacted acceptability and feasibility—by setting expectations for mobile phone supervision, emphasizing importance, increasing comfort, and sharing strategies to improve mobile phone supervision. Researchers must consider limitations to implementing digital health tools and design solutions alongside end-users to increase acceptability and usability. Co-developed implementation guidelines may provide a flexible and scalable approach to address challenges with implementing EBPs and implementation strategies in lower-resource areas.

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Chapter 1. INTRODUCTION

Most individuals around the globe are unable to access mental health care (Demyttenaere et al., 2004a). Though there are treatment gaps in nearly every country, there are larger treatment gaps in lower-resource settings, such as low-to-middle-income countries (LMIC), in part due to fewer trained mental health care providers (Demyttenaere et al., 2004b; Kohn et al., 2004). Task-shifting has emerged as a potential strategy to address the human resource shortages that contribute to the mental health treatment gap (Chibanda et al., 2016a; Hoeft et al., 2018; Laura K. Murray et al., 2014; Weiss et al., 2015). With task-shifting, lay counselors (e.g., teachers, health workers) without formal mental health training are trained and supported to deliver interventions (Van Ginneken et al., 2013). Evidence supports the effectiveness of task-shifting to deliver evidence-based practices (EBPs) for mental, neurological, and substance use disorders in lower-resource settings (Chibanda et al., 2016a; Dorsey, Lucid, et al., 2020; Hoeft et al., 2018; Van Ginneken et al., 2013; Weiss et al., 2015). As task-shifting continues to expand, more research is needed to understand how to fully embed and sustain task-shifting in lower-resource settings, including how to sustainably supervise and support lay counselors (Padmanathan & De Silva, 2013).

Ongoing supervision has been empirically shown to support EBP fidelity (Beidas & Kendall, 2010; Herschell et al., 2010; Rawson et al., 2013). Fidelity, defined within implementation science as delivering an intervention as intended by intervention developers, is thought to be important for ensuring clinical outcomes (Proctor et al., 2011). Supervision may be especially important for ensuring fidelity in task-shifting, as counselors have limited background in mental health and are asked to take on additional roles outside of their formal training and expectations. This may also place them at increased risk for burnout (Naslund et al., 2019).

However, the resources and expertise required to sustain and scale-up supervision may be limited in lower-resource settings. Research in the United States has highlighted the challenge of sustaining the cost of in-person supervision for EBP implementation efforts (Gilkey et al., 2014; Stewart et al., 2016). This may be amplified in lower-resource settings, where funding is lower and trained mental health providers who can serve as supervisors are both more limited in number and more geographically dispersed. To address some of these challenges in LMICs, communities and researchers have successfully used group supervision (as opposed to individual), and supervision has been mostly led by community members (Bolton et al., 2014; L. K Murray et al., 2011; Rahman et al., 2008). Nonetheless, these solutions do not fully address barriers related to the cost and inconvenience of in-person supervision within lower-resource settings. As task-shifting efforts continue to be scaled across lower-resource settings, supervisors may need to travel long distances to conduct in-person supervision, with inclement weather adding to transportation costs and time (e.g., rainy seasons may increase travel cost and time in rural locations).

Opportunities may exist to leverage digital technology as a tool to supervise lay counselors and decrease need for in-person supervision**.** As access and use of mobile phones continues to rise around the world (We Are Social & Hootsuite, 2021), there has been increased research examining the use of digital technology and cell phones in LMIC (Donner, 2008). Most of this research has come from the field of Information Communication Technology and Development, and it has documented the benefits and challenges of mobile phone use in LMIC (Kusimba et al., 2015; Murphy & Priebe, 2017; Wyche & Olson, 2018). It has also noted the importance of considering the limitations of mobile phones when designing and implementing digital technologies in LMIC (Wyche & Murphy, 2012). Similar benefits and limitations emerge

from research focused on the use of digital supports to healthcare provision in LMICs (Feroz et al., 2020; Henry et al., 2016); however, less work has examined how mobile phones can be used as tools to support task shifting of mental health treatment, which may require more tailored and interactive support than other types of healthcare provision (e.g., role playing how to discuss a traumatic event).

Psychology and global mental health researchers have called for studies evaluating the potential of digital health tools (e.g., mobile phones, websites, and other technology-based platforms) to improve mental health services (Kemp, Petersen, et al., 2019; Naslund et al., 2017, 2019). In LMIC specifically, an emerging body of literature has examined the use of digital health tools to support lay counselors, including facilitating training (Shields-Zeeman et al., 2017; Zafar et al., 2016), providing tools for diagnosis (Diez-Canseco et al., 2018; Maulik et al., 2017), and supporting supervision (Chibanda et al., 2016b; Gureje et al., 2015; Henry et al., 2016; Xu et al., 2016). However, while this work may utilize digital health solutions, it has not explicitly discussed the various ways in which mobile phones are used to support service provision, nor has it focused on the supports needed to facilitate mobile phone-based solutions. Existing research has largely implemented digital tools without reporting on lay providers' perceptions of those tools or their suggested supports to facilitate the implementation of digital health tools. Research that has focused on providers' experiences (e.g., Henry et al., 2016) has not been related to task-shifting mental healthcare, which may have unique considerations. Considering the challenges and preferences of those likely to use mobile phones for supervision is essential to ensure they can be used effectively. Without considering these contextual factors, a push for greater mobile phone supervision (or other digital health tools) may create additional

gaps between who can and cannot utilize the technology, thereby inadvertently contributing to inequities.

Given the complexity of implementing clinical interventions or new practices, implementation science has highlighted the importance of attending to implementation outcomes—factors that affect successful implementation (Proctor et al., 2011). These outcomes are distinct from clinical outcomes (e.g., changes in symptoms) and include outcomes such as acceptability (Proctor et al., 2011), feasibility (Proctor et al., 2011), and usability (Maguire, 2001). These outcomes affect the likelihood that clinicians, clients, and other relevant stakeholders implement innovations in practice. For example, acceptability is defined as "the perception among implementation stakeholders that a given treatment, service, practice, or innovation is agreeable, palatable, or satisfactory" (Proctor et al., 2011, p. 67). If clinicians do not find a new intervention or practice to be acceptable, they may be less likely to implement or sustain it. As such, the implementation of any new intervention or practice must be guided by the needs and preferences of supervisors and lay counselors. Human-centered design (HCD) offers a guiding framework for researchers to understand and incorporate the needs and preferences of end-users (Norman & Draper, 1986), including in global health research (Bazzano et al., 2017) and mental health intervention and implementation support development (Dopp et al., 2019; Lyon & Koerner, 2016). By understanding and addressing user preferences at each step, relevant implementation outcomes may be targeted, and the acceptability, sustainability, and equity of such interventions and practices may be increased.

The HCD framework complements other research on how to tailor implementation support to address the myriad of challenges that may be encountered during the implementation of clinical innovations (Baker et al., 2015; Powell et al., 2017; Waltz et al., 2019). By

understanding users' needs and preferences, implementation support can be tailored (i.e., individualized or modified) to address context-specific needs or challenges. Implementation supports are typically delivered via implementation strategies, defined as "process[es] to adopt and integrate evidence-based health innovations into usual care" (Powell et al., 2012). Implementation strategies may be discrete (i.e., one action or strategy delivered in isolation) or multifaceted (i.e., combining multiple discrete actions or strategies) (Powell et al., 2015). Some multifaceted implementation strategies, such as implementation facilitation (Smith et al., 2022) and technical assistance (Katz & Wandersman, 2016), combine multiple discrete strategies with tailored guidance and external support. For example, facilitation and technical assistance may include external facilitators or specialists who provide guidance and suggest implementation strategies to help an organization address challenges to implementation. While more intensive support may be effective, these complex multifaceted implementation strategies may be more resource-intensive than can be supported in some settings or than is required for some interventions.

On the less intensive end, discrete strategies, like mandating changes or obtaining formal commitments from agencies (Powell et al., 2015), can be implemented in isolation and without external support. Implementation guidelines also represent another less intensive, discrete implementation strategy. Implementation guidelines are documents that contain recommendations to guide program implementation (World Health Organization, 2014). Guidelines are typically only shared with providers (e.g., distributed over email, published, or posted on a website), and they are not commonly discussed or tailored to different contexts. In that sense, they are considered a discrete implementation strategy. Guidelines are frequently used to support implementation of healthcare innovations, including within LMIC (Francke et al.,

2008; Nabyonga Orem et al., 2012). Despite this, there are noted challenges with dissemination of guidelines (e.g., guidelines may be too complex to implement or not properly disseminated; Francke et al., 2008), which may be intensified in lower-resource settings, such as LMIC (Nabyonga Orem et al., 2012). Given their universal nature, guidelines may also be less tailored to specific needs and contexts of providers. Despite this, there is evidence to suggest that, with proper planning, stakeholder engagement and dissemination, guideline implementation can result in desired impacts on clinician behavior (Peters et al., 2022). Thus, combining guidelines with other minimally-intensive implementation strategies, such as educational outreach visits to discuss and plan for guideline implementation, may be an appropriate and resource-efficient means of supporting mobile phone supervision. When introduced appropriately and grounded in the needs and preferences of eventual users, implementation guidelines may offer suggestions to address challenges to mobile phone supervision across contexts (e.g., different levels of network reception between communities or differences in types of phones between counselors) without the resources required for ongoing facilitation or technical assistance.

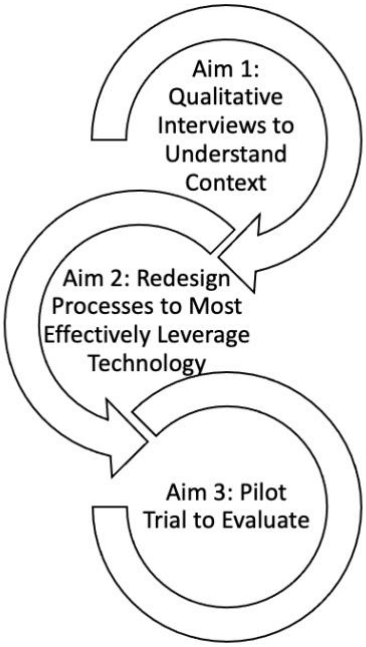
Current Study

The present dissertation outlines the results of an iterative, mixed methods study that developed and evaluated the effects of introducing co-developed implementation guidelines via educational outreach visits on the acceptability, feasibility, and usability of mobile phone supervision for lay counselors in Western Kenya (Figure 1.1). To add to literature on how mobile phones are currently used and provide context for design, we used qualitative interviews to explore the current context of mobile phone use and acceptability and feasibility of scaling-up mobile phone supervision (Chapter 2). In line with HCD, we also sought to co-design solutions to improve mobile phone supervision by eliciting strategies from lay counselors and supervisors

(i.e., end-users) on how to improve mobile phone supervision in their context (Chapter 2). Both aims add the voices of lay mental health counselors and supervisors themselves into the literature—a major point of innovation. These suggestions were used to co-develop implementation guidelines for mobile phone supervision (Chapter 3). The guidelines were disseminated and discussed by supervisors in a singular educational outreach visit with lay counselors (i.e., educational outreach visits). Making use of a stepped-wedge cluster-randomized design, we compared effects of providing guidelines across quantitative measures of acceptability, feasibility, and usability. Results are contextualized with semi-structured interviews to explain the benefits of the guidelines and how it might have impacted outcomes. By conducting this research with lay counselors in western Kenya, we hope to highlight how minimally intensive approaches, such as ours, can be applied to improve implementation of health care innovations in lower-resource settings around the globe.

Figure 1.1

Trial Design Overview.



Chapter 2. UNDERSTANDING LAY COUNSELOR PERSPECTIVES

Methods

This trial builds on a NIMH-funded cluster randomized controlled trial, "Building and Sustaining Interventions for Children (BASIC): Task Sharing Mental Health Care in Low Resource Settings" (Dorsey, Gray, et al., 2020). BASIC represents a long-standing collaboration between researchers in the United States and Kenyan partners at Ace Africa. Presently, the BASIC trial has trained 240 lay counselors [120 teacher counselors and 120 Community Health Volunteer (CHV) counselors] to deliver a group-based and culturally-adapted Trauma-focused Cognitive Behavioral Therapy (TF-CBT; [Cohen et al., 2006]). Lay counselors work together in groups of three to provide the treatment and are trained and supervised by Kenyan supervisors, who are experienced lay counselors, previously trained and supervised in TF-CBT as part of a randomized controlled trial (Dorsey, Lucid, et al., 2020) that preceded BASIC. Per the BASIC protocol, supervisors meet in-person with lay counselors at least 4 times during their first round of implementing TF-CBT groups. These meetings consist of role plays, discussion of any challenging treatment elements, and problem-solving challenges with children and guardian participants. Supervision has included ad hoc mobile phone communications during times between in-person meetings. Mobile phones, including SMS and WhatsApp, emerged as a supervision and support strategy early in the BASIC trial, and the COVID-19 pandemic increased the team's reliance on mobile phones to provide support. Despite the reliance on mobile phones to provide support from a distance, the extent to which mobile phones could be used and systematically implemented to support supervision remained understudied.

Participants

To understand how mobile phones were being used, interviews were conducted with supervisors and lay counselors who received training in (and subsequently delivered) TF-CBT as part of the BASIC trial. Again, per the BASIC protocol, supervision occurred in-person with lay counselors at least 4 times during their first round of implementing TF-CBT groups, and all lay counselors received ad hoc mobile phone supervision throughout. Lay counselor participants were selected via a stratified random sampling approach to balance participants across counselor type (i.e., teacher and CHV counselors) as well as those who used mobile phones with varying frequencies. Supervisors categorized 180 lay counselors who had completed TF-CBT delivery into one of three categories: 1) high-frequency users; 2) average-frequency users; and 3) low-frequency users. Interviewing "extreme" users—those using mobile phones with high or low frequency—is a HCD technique which is intended to more easily illustrate the range of behaviors and needs of a population (IDEO, 2015). Per the published study protocol (Triplett et al., 2021), we planned for supervisors to rate counselors' use with a 1-7 Likert-type scale; however, a narrower rating scale was ultimately more feasible. After all counselors were rated for mobile phone use frequency, a US-based team member stratified participants by counselor type (teacher; CHV) and frequency of mobile phone use. A random number generator was used to randomly select participants. We selected 12 participants from each lay counselor type (i.e., 12 CHVs and 12 teachers), as 12 is generally considered sufficient for saturation (Guest et al., 2006; Hennink & Kaiser, 2022). Mobile phone usage was balanced across counselor type (i.e., 1/3 of the total sample was from each usage category and 1/2 of those users were teacher and CHV counselors). The supervisor participants were the three BASIC trial supervisors who remained employed with our Kenyan partner, Ace Africa, at the time of this study. These supervisors are the only current

supervisors for the BASIC study. Given supervisors are all active and frequently connected to their lay counselors, we did not rate their frequency of use. It is assumed all supervisors would have been considered high frequency users. Interviewers approached participants via telephone to invite them to participate and gather informed consent. There were no exclusion criteria for lay counselors or supervisors.

All those invited agreed to participate in the interviews, and for counsellors, interviews were conducted where they delivered treatment. Lay counselor participants were 1/3 male (n=8), as were supervisor participants (n=1). Due to a recruitment error, one third of participants (n=8) used their mobile phones with high frequency, and slightly different numbers used their phones with average frequency (n=9) and low frequency (n=7). Of lay counselor participants, six (25%) did not have smart phones. These participants were all CHVs and split across high frequency (n=2) and low frequency users (n=4).

Procedures

Semi-structured interviews were conducted by a trained study interviewer in the language of the participant's choosing (i.e., Kiswahili or English). Though other languages are spoken in the study catchment area, all research activities from the parent trial are conducted in English and Kiswahili, as community members indicated preference for the two languages. As such, we opted to conduct interviews in these preferred and official languages. Code-switching, or alternating between languages, was observed in some interviews. Participants were free to switch between English and Kiswahili, though interviewers directed them back to those languages when they spoke other, non-study languages (e.g., Luhya). Interviewers were both male and female and had at least an undergraduate degree. Interviewers had completed all study interviewing for the parent trial and already knew participants. Each interview lasted approximately one hour. No

repeat interviews were conducted, and o other non-participants were present for interviews. Supervisor interviews were completed by the principal investigator, a white male graduate student from the United States. All supervisor interviews were conducted in English. Interview protocols for all interviewees began broadly, first reminding interviewees of the goals of the study, then asking them to reflect on how they used their mobile phones to communicate regarding treatment delivery in their respective roles. Questions became more tailored to examine what they liked most about using mobile phones for supervision, challenges or frustrations with mobile phone supervision, and the degree to which they felt mobile phones could replace in-person supervision.

Drawing from HCD techniques, the final question asked participants to describe how they would use their mobile phones during a specific "scenario of use" (Maguire, 2001), a hypothetical scenario in which they were preparing for a treatment group and needed to request supervision via their mobile phone. The interview guide was piloted and refined with support from study interviewers. The final interview guide is included in Appendix A. Interviews were recorded with participant permission, transcribed, and translated (when applicable). Interviewers also took notes during interviews to ensure participant responses were comprehensive and note any places that may need additional clarification before concluding interviews. Transcripts were not distributed to participants for review but select transcripts were reviewed in conjunction with audio by members of the research team. Participants received a small incentive for participation (equivalent to $5). The Institutional Review Boards at the University of Washington and Kenya Medical Research Institute approved all study procedures. Kenya's National Commission for Science, Technology and Innovation also reviewed and permitted this research.

Analysis

Transcripts were coded in Dedoose by researchers in the US. Kiswahili interviews were translated by native Kiswahili speakers and trained translators. Interview transcripts were analyzed following Braun & Clarke's (Braun & Clarke, 2006) six-phase framework for thematic analysis. The principal investigator, NST, along with two collaborators, initially reviewed a random sample of six interviews, independently generated codes, and collaboratively developed an initial codebook. The remaining interviews were assigned to pairs of two coders, who coded independently then met to discuss all codes to consensus. A third coder was involved to resolve any discrepancies. Three additional coders supported qualitative coding that were not engaged in codebook development, for a total number of six coders. All coders all had experience in conducting qualitative research, and the principal investigator led all coding and training for the coders. Most coders (5/6) were US-born and fluent only in English, and one coder was born in Kenya and fluent in both English and Kiswahili. Each coding pair included one member of the original codebook team. The codebook was considered a "live document" and iteratively refined throughout the coding process. After completing all coding, results were presented back to interview participants for member-checking at an in-person workshop. This workshop also included other human-centered design activities, which are reported elsewhere (Chapter 3). The codebook team worked together to propose and refine qualitative themes that grouped together the member-checked codes. Qualitative methods and results are presented in concordance with the COREQ (Consolidated criteria for Reporting Qualitative research; [Tong et al., 2007]).

We utilized a convergent mixed-methods design (Creswell & Plano Clark, 2017) to compare qualitative data across the three mobile phone usage categories—high frequency, average frequency, and low frequency. Qualitative results were transformed into quantitative counts, wherein each theme was coded as present or absent in each interview. Percentages were

calculated to represent how often participants in each usage category mentioned themes, and joint displays were created to integrate the transformed qualitative data (i.e., percentages) by usage category. Given the challenges in quantizing qualitative data (Nzabonimpa, 2018), we present numbers and percentages with caution to highlight any potential differences between usage categories. We did not seek to run statistical tests or make declarative claims about differences within groups.

Results

Twenty-four lay providers (N=12 teacher counselors & 12 CHV counselors) and three supervisors were invited and interviewed in June 2021. Multiple themes emerged from interviews, including information on the various uses of mobile phones to support delivery, likes and dislikes of mobile phone supervision, barriers, and facilitators to using mobile phones for supervision, and strategies to overcome barriers. Direct quotes or translations are presented to contextualize themes.

Use of Mobile Phones

Lay counselors and supervisors described three sub-themes of uses of mobile phones to support intervention delivery, including: 1) requesting and providing advice and updates on clinical content; 2) requesting and scheduling in-person supervision, and 3) requesting and providing advice on research procedures.

Advice and updates on clinical content

Participants described requesting and providing advice on clinical content as well as providing routine clinical updates on clients' symptoms via mobile phones. When supervisors were unable to provide in-person supervision, lay counselors received advice on how to deliver clinical content via phone calls or messages. Supervisors provided clarifications on clinical content and supported lay counselors when they encountered specific clinical challenges. One lay counselor explained, "Maybe I'm doubting something in the session I'm going to present, so I want some clarification about what I'm going to do... Then maybe [my supervisor] will tell me [what to do] … you find that I have solved that problem." Another counselor discussed the benefits of mobile phones for providing support with clinical issues that arose during session, "So I had [a] problem and then in the middle of the session I had to call. When I called, [they]

responded very quickly, [they] told me [how to proceed] … so it helped me very much... it was a quick response and it helped me in the middle of the session." After conducting clinical sessions, lay counselors also used mobile phones to provide updates and debrief with their supervisors. One counselor described providing post-session updates via SMS, including "how many have attended the lesson, and what [the counselors] have done, and how [the counselors] feel about the lesson."

Scheduling and Coordinating

Participants emphasized the value of mobile phones in scheduling and coordinating clinical activities, including clinical practice, sessions, and supervision. Following their in-person clinical training, supervisors "communicated to [lay counselors] on when to start the [intervention] through the phone and… instructed [them] on how [they] should schedule [their] lessons with clients… with the phone, [lay counselors] were able to mobilize clients and started the [intervention]." Given guardian involvement in the intervention, mobile phones were also important tools to reach out to guardians, invite them to participate, and inform them of the intervention group times. Lay counselors also used mobile phones to connect and coordinate with their co-counselors. Lay counselors would call or message each other to plan practice or coordinate who would lead which sections of the clinical content for upcoming sessions: "Sometimes we call each other. I can call or text them. But most of all I just call them on the phone."

Beyond scheduling clinical sessions, mobile phones were instrumental in scheduling supervision—both in-person and via mobile phone. One counselor explained the importance of communicating before in-person supervision to schedule and coordinate, "If I'm informed on time, maybe I will try to plan as per… I will try maybe telling the supervisor that, 'At this time, I

will not be available, or I will be available.' If I'm informed on time, I will try to avail myself rather than being ambushed… maybe I'm in class, you see I will not be available. So, I have to be informed by the supervisor tomorrow such a thing will happen." As the counselor explained, given the other responsibilities that lay counselors were managing, it was important to be proactive and plan supervision meetings. Scheduling and coordinating were similarly important for phone calling and telephonic supervision, again given lay counselors competing priorities and other challenges that arose: "I could just SMS and say it is heavily raining here, maybe we'll meet later. And then [my supervisor] will respond it's okay."

Research Procedures

A final key use of mobile phones was communicating with supervisors regarding research procedures for the parent BASIC trial. Lay counselors described completing several research procedures or related functions via mobile phones. Supervisors reminded lay counselors about reporting requirements and advised them on issues related to participant recruitment and attendance. Lay counselors photographed and sent anonymized research forms to their supervisors via SMS or WhatsApp; they would also request paper copies of forms or other intervention materials via phone. One lay counselor described, "You find that it easy even to send a report through the phone. Because you're just preparing a report and then if it is taking a photograph and then I'll send it through WhatsApp…" Finally, lay counselors were provided with airtime or other incentives for participating in the research trial via their mobile phones and mobile money: "We use the phone [for many things] ... Whenever [supervisor] wants to give us that payment [they] give us for that week, it's a phone call."

Acceptability

Lay counselors and supervisors described both likes and dislikes associated with using their mobile phones for supervision. Likes were categorized into three sub-themes: 1) decreased lay counselor and supervisor burden; 2) facilitated clinical and personal support, and 3) increased independence. Dislikes were also categorized into three sub-themes: 1) limited information transmission; 2) impacted ability to build rapport, and 3) disrupted communication flow.

Like: Decreasing Burden

Participants frequently described how using mobile phones for supervision decreased burden for the entire team—both lay counselors and supervisors. Utilizing mobile phones for clinical supervision allowed counselors and supervisors to decrease travel required for in-person supervision. Participants described the challenges of traveling on unpaved roads, and the benefits of saving time and costs: "mobile communication [allows] the supervisor to reach interior places without a problem, because we have some schools which are in interior, where means of transport is very poor. During the rainy season, the supervisors get a very big problem in traveling. Therefore, when there is a mobile communication, the teacher and the supervisor will just communicate." This was frequently associated with comments related to decreasing risks of supervision, both in terms of decreasing travel risks and protecting against the spread of COVID-19. One lay counselor described, "The government is encouraging digital devices because the supervisor can travel from the office to school and maybe one of the teachers is having coronavirus. Therefore, the supervisor contacts it… Through the mobile phone they will only communicate, but the virus will not spread." Prior to the adoption of mobile phones for communication, lay counselors and supervisors also communicated through written letters. Participants described the use of mobile phones as decreasing burden from letter writing: "You

see, before we started using the mobile, most communication was through [letters]... the supervisor or the counselors could just communicate over phone and avoid those [letters] that were supposed to be moved around to know what was going on and what was to take place at what time."

The above benefits of mobile phone supervision saved time for counselors and supervisors and resulted in lay counselors feeling as if their counseling duties were more manageable. One counselor described, "[Mobile phone communications] are a quick way of getting what you want… Once you call, you're given a way forward, and you do it immediately without wasting time." The timesaving and convenience of mobile phone supervision also made providing supervision to lay counselors more feasible for supervisors. Supervisors noted this, and lay counselors also described this as something they liked about using mobile phones: "Personally, I will be satisfied [with mobile phone supervision] … because if so, I can talk to my supervisor. Whatever I want, [they] can help me, even by phone… [they] will also be saving [their] time to serve us counselors because I know we are many. [They] will satisfy everyone."

Like: Facilitating Support for Counselors

Participants often discussed the benefits of mobile phones in facilitating support—both for clinical skills and personal wellbeing. Lay counselors were able to easily and frequently reach supervisors for support via mobile phones. One supervisor explained that they encouraged their lay counselors "if something pops in your head, or if you have a question, you can just text or just [call and hang up to avoid being charged], anytime. And then I can call you back, or you can just call me and then we can talk, anytime that a question pops in your head." Lay counselors described reaching out to supervisors for support with urgent matters, including challenges that arose during clinical sessions, and how receiving in-the-moment support enabled them to continue delivering content: "I had that problem and then in the middle of the session I had to

call. When I called [they] responded very quickly... it helped me very much. Because if I had not called, maybe I could have forced something to children. So, it was a quick response and it helped me in the middle of the session." Lay counselors also appreciated the ease of access to support for non-urgent matters, which enabled them to get answers promptly without waiting for an in-person supervision meeting: "I report to... my supervisor, I call [them] and [they] explain it to me and [are] always there and as I explain my problem to [them], [they] solve it. Instead of us meeting face-to-face. Which would have taken a lot of time."

Participants also discussed the personal benefits of using mobile phones for supervision. Supervisors used mobile phones as tools to build morale and encourage lay counselors, often sending "good luck" or other inspirational messages to their lay counselors. One counselor described their feelings when receiving these messages: "[my supervisor was] encouraging me to do the job and also to encourage my colleagues to just work hard… so that these children should be encouraged that they are not the only ones, we have many orphans. Life-giving... I loved it so much, it made us work hard." Mobile phone supervision was also a place for lay counselors to communicate with one-another and get to know each other better: "As [lay counselors], we used the phone to get to know each other better and to remind each other when to get to the [school] so that we could work... communication was very easy for me, for my supervisor and fellow [counselors] who we were working with at the time." Finally, some lay counselors expressed an appreciation for the privacy and confidentiality afforded by mobile phone supervision. Lay counselors felt more comfortable expressing their concerns or asking questions via private message or phone call than in front of their co-counselors. One supervisor described this, "talking to them individually through phone, to me, it's very helpful because they will be opening

up, telling you how the session was. When you talk [to the group] everybody wants to be perfect, they don't want to appear like they did something wrong…"

Like: Increasing Independence

Finally, lay counselor participants specifically discussed how mobile phone supervision afforded them increased independence as counselors and, as a result, increased confidence in their own abilities and teamwork. Mobile supervision indicated to lay counselors that supervisors trusted their ability to provide quality care: "You know sometimes when you leave people with freedom and trusting them, they even work better than just when you're on their back… I feel good [as a result] ... I feel trusted." The independence afforded by mobile phone supervision also enabled lay counselors to trust in each other more and develop more cohesive group dynamics: "through the phone [they have] guided us to do what is required of us... So, [their] phone communication made us trust each other and work without questioning each other."

Dislike: Limited Information Transmission

In addition to the many aspects around mobile phone supervision that participants liked, certain dislikes arose from the qualitative interviews. Lay counselors disliked how speaking through the phone to supervisors limited the transmission of information to supervisors. Specifically, many counselors disliked that mobile phone supervision did not allow for a full discussion between the counselors and supervisors. One lay counselor stated, "You will briefly talk on [the] phone, but not about everything you need to know." Similarly, lay counselors disliked that receiving support over the phone did not lend itself well to demonstrations of clinical techniques. One counselor explained, "I want to believe that when it comes to those demonstrations, then face-to-face [supervision] cannot be replaced by mobile for clarity." Mobile phone supervision also hindered the lay counselors' and supervisors' ability to convey and examine body language and gestures. As one supervisor noted, "The only problem [with mobile

phone supervision] is that sometimes I can't really observe the body language in terms of maybe the non-verbal gestures." In-person supervision would allow for this non-verbal communication, which can be essential for training soft skills in lay counselors. A teacher counselor explained that with, "face-to-face communication, you are able to even read the facial expressions that assist in communicating."

Dislike: Limited Relationship with Supervisors

Participants highlighted the importance of establishing a strong relationship with supervisors and noted that mobile phone supervision limited their ability to establish a trusting relationship. One lay counselor explained that meeting in-person first is essential and then they, "will have what it takes to express [themself] better than on the phone." Another lay counselor agreed, "face-to-face sometimes also enhances that particular … public rapport...between the supervisor," which leads to closeness that will, "also enhance or will encourage good relations." Rapport between lay counselors and supervisors is important to establish prior to mobile phone supervision because as one counselor noted, "if there is no cooperation, the understanding when [the supervisor] calls, I will lie to [them]." One way in which lay counselors and supervisors established rapport in-person was through gifts and incentives. For example, one counselor noted, "[my supervisor] will at least give some allowance… Let's say travelling allowance or buying me lunch." Counselors expressed concerns that increasing reliance on mobile phone supervision would result in fewer incentives or gifts from their supervisors—an additional drawback beyond limiting relationship building.

Dislike: Limited Communication Flow

Participants frequently expressed dislike for the disjointed or delayed nature of mobile phone supervision. When using phones for supervision, lay counselors noted a frequent time lapse between when a counselor asked a question and received or read a response from the

supervisor. One lay counselor explained: “sometimes [my supervisor] might call when maybe we're in class, so you find that picking the call becomes a problem. So… after classes is when you find the call and maybe [they] wanted to remind [you of] something at that particular time…. Now giving [them] what [they] wanted ... becomes a problem. Or you give [them a call] but whatever information [they] wanted might not reach [them] at the exact time.” In addition to the delayed communication flow due to a time lapse between question and answer, counselors and supervisors both noted that information communicated via the phone would often not reach all counselors. The supervisors stressed their desires to “to get in touch with all the counselors so that they don't feel left out;” however, in certain situations supervisors may choose to message one lay counselor who can be more reliably reached. The drawback to this approach was that occasionally lay counselors “don't easily relay information to the rest,” which in turn introduces challenges with ensuring all counselors receive all communications and all responsibilities are met.

Comparing Acceptability by Usage Category and Role

Differences in the percentage of interviews in each usage category that mention each theme are presented in Table 2.1. There were few differences in the presence of themes by usage category and role (i.e., supervisor vs counselor). Low frequency phone users less commonly mentioned how mobile phones decreased burden, and they never mentioned increased independence because of mobile phone supervision. Among all usage categories, low frequency users were least likely to mention dislikes (43%), and high frequency users were most likely to report dislikes (63%). Low frequency users also never mentioned challenges were mobile phones limiting their relationship with supervisors.

Table 2.1

Percentage of interviews in which acceptability themes appear, by usage category

Theme	High Frequency (N=8)	Average Frequency (N=9)	Low Frequency (N=7)	Supervisors (N=3)
Likes	**8 (100%)**	**9 (100%)**	**7 (100%)**	**3 (100%)**
Decreasing Burden	7 (88%)	9 (100%)	4 (57%)	3 (100%)
Facilitating Support	8 (100%)	9 (100%)	7 (100%)	3 (100%)
Increasing Independence	2 (25%)	2 (22%)	0 (0%)	0 (0%)
Dislikes	**5 (63%)**	**5 (56%)**	**3 (43%)**	**3 (100%)**
Limited information transmission	2 (25%)	3 (33%)	3 (43%)	3 (100%)
Limited relationship with supervisors	2 (25%)	3 (33%)	0 (0%)	0 (0%)
Limited communication flow	4 (50%)	2 (22%)	1 (14%)	1 (33%)

Feasibility

Facilitators were categorized into four sub-themes: 1) access to working smart phones; 2) ease and convenience of smart phones; 3) cell phone literacy, and 4) a strong supervisor and counselor relationship. Barriers were also categorized into four sub-themes: 1) limited resources and time; 2) technical difficulties; 3) communication challenges, and 4) contextual limitations on which activities can effectively be performed via mobile phones.

Facilitator: Access to Working Smart Phones

Participants noted that having a working smart phone with access to reliable internet, cellular service, and electricity allowed lay counselors and supervisors to engage in mobile phone supervision. One lay counselor summarized: “if you get a good phone, which can access all those things, there is such a possibility that the work [supervision] should be done by phone without any doubt.” Another lay counselor mentioned that “if the network is available, we can

communicate at all times." Some lay counselors described that access to alternative phones when personal phones were not available facilitated mobile phone supervision.

Facilitator: Ease and Convenience of mobile supervision

Additionally, lay counselors and supervisors described ways in which mobile phone supervision provided an easy and convenient alternative to in-person supervision. Lay counselors and supervisors mentioned that when both parties had wider availability, mobile phone supervision was easier to use. A few lay counselors specifically explained that communication around availability made mobile phone supervision doable. One lay counselor highlighted that, "Anytime you call, [my supervisor's] phone is always on. So, [they] have been a good supervisor because sometimes you can be in the middle of a session and maybe call and don't get [them]...but...I've never called, and I missed my supervisor." Decreased costs in terms of travel and time associated with mobile phone supervision also made supervision more feasible. For example, a lay counselor described, "the first thing that makes it easy to receive phone management is that it will be quick and cheap."

The utility of mobile phone supervision in routine instances (e.g., when a question arises during session) also contributed to lay counselors reporting mobile phone supervision as feasible and easy to use. In describing the way in which supervision can fit, a lay counselor explained, "in areas where things move on well without many hitches, then mobile supervision can work." In addition to routine instances, mobile phone supervision was made easier by its routine protocol. For example, a counselor mentioned that "now as I'm doing this, I know this is my work. I have to finish it within [the] designated time. I have to do it accordingly and to the core expectation of the corporate organization." Thus, if the expectation within an organization was that supervision will be via mobile phones, counselors found the practice easier and more convenient.

Facilitator: Supervisor-Counselor Relationship

Participants reported that the trust and cooperation between supervisors and lay counselors contributed to the feasibility of mobile phone supervision. One lay counselor explained, "I think it's just a matter of cooperation between the supervisor and the counselor…It will be easier for me." A warm and supportive supervisory relationship may be particularly important in mobile supervision where visual cues may not be as clear (e.g., body language facial expressions). Another lay counselor expanded on this idea: "Because without trust and cooperation I can send something [to my supervisor], I can send anything even if it is useless. It's not good. But if we trust each other and work together here ...the phone call is real."

Facilitator: Mobile Phone Literacy

A final important facilitator that counselors noted was familiarity with the platform (e.g., WhatsApp or SMS) used in mobile phone supervision: "after getting that information [about WhatsApp], then I can easily connect with the supervisor and communication takes place." When counselors and supervisors are knowledgeable about the platform on which they are communicating, mobile phone supervision is doable. Considering the COVID-19 pandemic, familiarity with mobile phones and virtual communication has become the norm. A supervisor described this: "I want to draw you back to the pandemic that has struck the world, that is COVID, which has discouraged face-to-face communication to some extent. Basing on that, I want to believe that with the mobile and channels through the mobile it'll be possible to hold sessions and have discussions through the mobile [devices], and especially the video discussions through WhatsApp."

Barrier: Limited Resources and Time

Participants noted a few tangible barriers to remote supervision, often discussing issues of phone airtime and the challenges balancing competing priorities during phone

calls. Participants repeatedly mentioned lacking airtime, which hindered their ability to connect with their supervisors: “Airtime. You may not have it. Maybe I have no money to buy it. And I want to talk to my supervisor. You see there is a problem. Sometimes I have something that is disturbing me, or at school something has disturbed me, I have to talk to [them], but I don't have airtime.” Further challenging participants was the cost of owning a working smart phone, which they felt was needed to have the best experience with mobile phone supervision (i.e., send photos and videos, access WhatsApp). Finally, participants expressed challenges with balancing many competing priorities within their limited time. One participant said, “[our supervisor advised us that] we are going to have a session on mobile phone. Then during that time, we are doing an exam [with the children] ... So, it becomes difficult to use that mobile phone at that time… If it is face-to-face... [our supervisor] can just wait for one hour, it will be possible… Immediately the exams were over, we gathered the children, and then we [had supervision]. So, if it through mobile phone, it will be a problem. But the face-to-face, you will see it will work.”

Barrier: Technical Difficulties

Another common barrier to remote supervision was related to physical issues with the phones themselves (e.g., broken or out of date, weak phone battery), as well as problems with the network connection. Participants mentioned that keeping the phone charged is especially challenging when there is unreliable electricity and rolling blackouts. Lay counselors also had issues with network bandwidth where they were unable to place calls, and other times where a poor network connection affected the quality of the phone call in a way that they could not understand their supervisor clearly. All the above were complicated by weather, which impacted both the power supply and network access. One participant explained, “Even if you can call someone on phone, then you are told that they are not available. Yet their phone is on. Now, at

some point the network is the issue, and the rain is coming this way... You find there is no network at my end."

Barrier: Communication Challenges

Remote supervision inherently impacts the nature of communication between supervisor and counselor, and some of these changes were cited as barriers by the participants. Difficulties getting clarification on clinical skills and lack of encouragement over the phone were mentioned. Some participants noted concern that there are nonverbal communication cues that are missed while using remote supervision. In addition, the time delay between asking their supervisor a question and receiving an answer also posed issues and increased the possibility of miscommunication. One participant noted, "Sometimes you could call the supervisor and then maybe [they're] also engaged in a meeting, [they'll] tell you, 'I'll call you later.' And sometimes [they] might call very late when that issue has been left or has been left unresolved like that, or you have solved within your knowledge." Furthermore, participants experienced occasions in which phone conversations felt rushed, and they felt that these conversations were not prioritized the same as in-person conversations and more prone to interruptions. One participant explained, "When you are together, because you are physically present… you can exhaust everything, but by phone, the fear of airtime, you want to rush to finish quickly before the money runs out. And you leave out some points... It can make communication become half instead of being complete."

Barrier: Limitations on Activities

The final barrier for remote supervision was that participants felt there were some supervisory activities which could not occur over the phone. This code captured a range of various challenges, from not being able to physically hand a supervisor a report or receive COVID-19 supplies (e.g., hand sanitizer, masks), to concerns that lay counselors may not be taken seriously by management unless supervisors are seen in person. Additionally, some

participants said that remote supervision removes some of the responsibilities of the supervisor and puts them on the lay counselor themselves, such as conducting treatment sensitization with administration and guardians or terminating treatment groups. Finally, many lay counselor participants raised concerns that without in-person supervision other counselors may cut corners and not do their job as thoroughly: “You can't put a worker in a field and expect him or her (to) weed out everything without your supervision. He'll just tell you he's weeded. And if you go you get grass. He has not weeded out the dirt.”

Comparing Feasibility by Usage Category

Differences in the percentage of interviews in each usage category that mention each theme are presented in Table 2.2. There were few differences in the presence of themes by role (i.e., supervisor vs counselor). Low frequency users more commonly mentioned challenges with limited resources and time (86%), which included lacking knowledge of how to use smart phones. High and average frequency users more commonly mentioned technical barriers and communication challenges (100% for all).

Table 2.2

Percentage of interviews in which feasibility themes appear, by usage category.

Theme	High Frequency (N=8)	Average Frequency (N=9)	Low Frequency (N=7)	Supervisors (N=3)
Facilitators	**8 (100%)**	**9 (100%)**	**7 (100%)**	**3 (100%)**
Access to working smart phones	7 (88%)	9 (100%)	7 (100%)	2 (67%)
Ease and convenience of mobile supervision	6 (75%)	4 (44%)	3 (43%)	2 (67%)
Supervisor-counselor relationship	3 (38%)	1 (11%)	1 (14%)	0 (0%)
Mobile phone literacy	2 (25%)	3 (33%)	3 (43%)	1 (33%)

Barriers	**8 (100%)**	**9 (100%)**	**7 (100%)**	**3 (100%)**
Limited Resources and Time	6 (75%)	7 (78%)	6 (86%)	3 (100%)
Technical Barriers/Difficulties	8 (100%)	9 (100%)	6 (86%)	3 (100%)
Communication Challenges	8 (100%)	9 (100%)	5 (71%)	3 (100%)
Limitations on Activities	7 (88%)	6 (67%)	5 (71%)	3 (100%)

Solutions

Lay counselors and supervisors offered 27 discrete solutions or suggestions to improve the acceptability and feasibility of mobile phone supervision. Providing airtime and phones were among the most mentioned strategies to improve the acceptability and feasibility of mobile phone supervision. Lay counselors searching for and identifying locations with optimal network connection to take phone calls for supervision was also frequently mentioned. One lay counselor described, "We always just look for [network connection]. You can stand somewhere where it can come all, or maybe you're sitting somewhere where that network is not there. So, it needs you to move so that you get it. Move at a place where you can access it." Another less frequently mentioned strategy was to provide training on mobile phones and applications, such as WhatsApp, to facilitate use for lay counselors who may lack knowledge of mobile phones. Some lay counselors described the clinical and personal benefits of learning new features on their mobile phones, stating "The phone was a tool that helped me a lot especially at that time I came to learn how to use WhatsApp... I was taught so that I could even deal with challenges in the classroom or in the community about those children I was teaching. I would take pictures [for] my supervisor to see. I found myself in a new world through that part of the WhatsApp group." Each of the solutions, along with definitions and the challenges they were intended to address, are presented in Table 2.3.

Table 2.3

Solutions to improve acceptability and feasibility by targeted barrier.

Barriers	Solutions
Limited Resources and Time	Provide ***phone training*** for lay counselors who are less familiar with phones and their functions
	Lay counselors can ***flash supervisors***, where they call and hang up after one ring to avoid being charged minutes. Supervisors then call back using their own minutes.
	Lay counselors can ***"borrow" airtime*** from phone providers in cases of emergencies when they do not have airtime.
	Task-shifting projects should ***provide airtime*** to lay counselors as an essential tool for their work.
	Task-shifting projects should ***provide phones*** to lay counselors as an essential tool for their work.
Technical Difficulties	Lay counselors should ***ensure their phones are charged*** in advance of groups and known supervision contacts.
	Lay counselors should ***ensure their phones are working*** in advance of groups and known supervision contacts.
	Lay counselors should ***establish a pattern of minimally using phones on days*** of groups and known supervision contacts to ensure phones stay charged.
	Lay counselors should ***identify locations with strong network coverage*** near their delivery sites and/or homes.
	Lay counselors can ***borrow phones*** from co-counselors, colleagues, or friends if they encounter difficulties with their own phones.
	Lay counselors can ***replace phone batteries*** with borrowed or extra batteries.
	Lay counselors can request ***others send updates*** on their behalf when facing communication challenges.
	Lay counselors should plan to ***send communications early*** to accommodate any delays.
	Lay counselors can ***delay communications when needed*** to conserve resources.
	Supervisors can ***share information and advice from other sites*** to motivate lay counselors or aid them in trouble shooting challenges. *
Communication Challenges	Lay counselors and supervisors can quickly ***call to notify that important or urgent messages have been sent*** to avoid messages being missed.
	Lay counselors and supervisors can ***designate one counselor to relay all messages to co-counselors.***
	Lay counselors and supervisors can create ***group messages*** to send all communications to all counselors at one.
	Supervisors can ensure they are sending ***individual messages to each lay counselor.***
	Lay counselors should ***inform supervisors of the time of sessions*** so that supervisors can be available to support if needed.
	Lay counselors can ***call supervisors during sessions for "live" supervision.***
	Lay counselors and supervisors can ***send messages during sessions*** for support and updates.
	Lay counselors and supervisors can ***send forms via picture message*** for guidance.
	Lay counselors and supervisors can ***video call for modeling and guidance.***

	Lay counselors should briefly ***clarify their identity and purpose for calling*** when needing support.
Limitations on which activities can effectively be performed via mobile phones	Supervisors should ***begin by providing in-person supervision*** to build confidence, rapport, and/or handle challenges.
	Lay counselors should always feel empowered to ***request in-person assistance.***

** This solution could address either technical difficulties or communication challenges*

Discussion

Use, Acceptability, and Feasibility

Although lay counselors and supervisors reported some dislikes with mobile phone supervision, it was overall reported to be acceptable and feasible. Lay counselors and supervisors generated unique solutions to improve the acceptability and feasibility of mobile phone supervision, which were explored in a pilot trial (Chapter 3). Mobile phones are already often used to support healthcare providers in LMIC, and other mental health projects have examined how mobile phones can be used as a tool to support supervision (Chibanda et al., 2016b; Gureje et al., 2015; Xu et al., 2016). However, our findings are among the first to gather lay counselor perspectives and explicitly examine how use of mobile phones can be optimized as a low-tech digital health tool to support lay counselors and supervisors in supervision—a key solution to increasing access to mental health care and improving mental health equity around the globe. Findings call attention to important technical and contextual limitations—as indicated by lay counselors and supervisors themselves—that must be considered and addressed when implementing mobile phone or other digital health tools to advance health equity.

Most research on clinical supervision has been with US graduate students or community mental health providers, the latter of which has shown that clinical supervision largely focuses on case management (Dorsey et al., 2018). There has been limited work characterizing supervision of lay counselors, particularly by other lay counselors and via mobile phones. Our work contributes important descriptive information about lay counselor supervision via mobile phones. It extends beyond clinical support to include personal support, as well as additional ways to receive encouragement and motivation and to foster self-confidence and team building. This is somewhat consistent with other research from Kenya on supervision as a protective factor

against lay counselor burnout (Wall et al., 2020). Our findings add nuance to the various ways in which supervision can protect against burnout via mobile phone, such as encouraging text messages or reminders. Mobile phones enable lay counselors to feel supported from afar without the burden of traveling for supervision. Research from related fields has highlighted how phones can increase interpersonal connection in Kenya (Murphy & Priebe, 2017), though this work has not examined the intricacies of receiving clinical supervision via mobile phone. This finding is unique and important as we consider how to support a growing cadre of mental health care providers around the globe. An important consideration for equity and sustainability, however, is the difference in reported decreases of burden by usage category (i.e., low frequency users less commonly mentioned decreased burden with mobile phone supervision). This may be a result of the additional burdens of both learning how to use mobile phones and consistently checking for updates that is required with mobile phone supervision. Other implementation projects should consider offering support or training on how to use mobile phones to lay counselors—this was one of the many strategies generated by interview participants.

Though participants mentioned several facilitators, access to working smart phones was mentioned by almost every lay counselor participant (96% of total). Although access and use of mobile phones continues to rise around the world (We Are Social & Hootsuite, 2021), there is still variability in who has access to working smart phones. Among our lay counselor participants, 25% did not have a smart phone. Others explained that although they had smart phones, their phones were broken or "fragile" (e.g., having cracked screens or short battery lives). Extensive work has examined the challenges of mobile phone use in LMIC, and how technology developers may "leave behind" key populations in designing digital tools (Wyche & Murphy, 2012), though these considerations have been largely absent from conversations

regarding digital mental health solutions. Focusing solutions only on individuals who have working smart phones—individuals with relatively higher resources in these settings—would undoubtedly result in an inequitable digital health solution. Other task-shifting projects may consider providing smartphones for counselors or relying on "low tech" functions, such as foregoing WhatsApp for SMS messages and phone calls. They should also consider the varying needs and wants within participants, as was illustrated by our comparing across frequency of usage.

While the high numbers of likes and facilitators reported for acceptability and feasibility show the promise of mobile supervision, it would be a mistake to interpret these results as indicating that mobile supervision can completely replace in-person supervision. Instead, lay counselors and supervisors stressed that mobile phone supervision was an important add-on tool that can address shortfalls with in-person supervision. This important result from our co-design process resulted in changing our research methods and question from focusing on completely replacing in-person supervision with mobile phone supervision to instead optimizing the use of mobile phones to supplement in-person supervision. As other projects consider scalable and sustainable ways to increase access to mental health care and supervision, they should consider cultural and contextual barriers that may dictate whether in-person supervision would be preferred to virtual options.

Reflections on Human Centered Design

The work presented here represents a first step in our co-design process, which was been followed by further work to refine solutions and develop implementation guidelines for lay counselors and supervisors. It became clear that there was no singular solution that would be acceptable or feasible across all communities. Recognizing the importance of tailoring

approaches to the distinct contexts in which each lay counselor group operates, our research approach shifted from developing specific "solutions" that all lay counselors should adapt to presenting all possible solutions and facilitating lay counselors in identifying and prioritizing solutions that they felt would work best in their respective contexts. Noting recent critiques of design thinking as a form of colonialism (Ambole, 2020) and the ethics of engaging in global health research as outsiders, we attempted to de-center ourselves as researchers and center the needs of the lay counselors and supervisors. This also influenced our decision to have supervisors lead the member-checking and other human-centered design activities that occurred in the later steps of our research.

To honor the voices of our participants, we felt it was important to present all solutions. The solutions discussed included workarounds the lay counselors or supervisors were already using, additional workarounds they could use (though perhaps at considerable added cost or time to the counselors and supervisors), or outcomes that would better facilitate their work, though without a clear path or resources to achieving them. Many of the solutions generated by lay counselors and supervisors seemed to place the responsibility and burdens for addressing challenges on themselves. These solutions may reflect a focus on short-term solutions that could be implemented with minimal resources and a resourcefulness developed from living in marginalized and underserved communities—another lasting impact of European settler colonialism. It also highlights a limit of the co-design method as used in this study: it supported sharing techniques and tips among participants in the room, but many the solutions that could truly enhance their work required additional resources that neither they nor we were going to design our way out of needing. To equitably implement and sustain task-shifting models, especially when driven by US investment, resources must be allocated appropriately such that

additional burdens (financial, logistical, emotional) are not unduly placed on lay counselors and in-country supervisors.

Reflections on Digital Health Equity

Given the tremendous gaps in access to mental health care across the globe, scalable and sustainable solutions are needed to increase access to care for the most underserved populations. There has been increased attention on the potential of digital tools, such as mobile phone applications or internet-based treatments, to address the mental health treatment gap by directly targeting clients and patients (Garrido et al., 2019; Lehtimaki et al., 2021). Despite the potential of these approaches, they may leave behind key groups who do not have access to cell phones or the ability to use them—thereby risking the creation or reinforcement of health inequities. In these instances, in-person treatment models may be necessary. Digital health tools can still play a key role in supporting in-person treatment delivery, particularly with lay counselors; however, considering the needs and preferences of lay counselors and supervisors while co-designing digital tools with them is essential in ensuring digital health equity. By allowing lay counselors and supervisors to suggest solutions to improve mobile phone supervision in our trial, we co-developed multiple solutions with their needs and resources in mind. They not only generated solutions that could be used broadly, but also, with intimate knowledge of their own settings, they generated solutions that were uniquely suited to their experiences in their settings. These solutions may have the potential to increase equity in lay counselors' access to mobile phones for supervision—with appropriate community-led adaptation based on the context—and in turn increase equity in access to mental health treatment in the communities in which they work.

Limitations

These findings should be considered within the context of their limitations. The HCD approach employed in this study allowed supervisors and lay counselors (i.e., end-users) to provide feedback and suggestions for improvement on mobile phone supervision. However, as a result, our findings speak specifically to the use and optimization of mobile phones for lay counselor supervision in western Kenya. Though some findings may transfer to other settings or contexts, future work should aim to continually engage users across contexts and design and adapt solutions with those contexts in mind. Our number of supervisors for the study is also limited (n=3), which impacts our ability to extrapolate from supervisor interviews but also underscores the importance of scalable and sustainable supervision. Similarly, 25% of our lay counselors did not have smart phones, which impacts their experience with supervision and qualitative responses. Finally, when appropriate, interviews were translated, and all qualitative analysis was completed in English. Additionally, the interviewers had ongoing relationships with supervisors and lay counselors which may have impacted reporting accuracy. Interview scripts and prompts were designed to investigate specific facilitators and barriers to remote supervision (e.g., What would make it easier for you to receive supervision by your mobile phone?), and this wording may have influenced how supervisors and lay counselors responded, as opposed to an unstructured interview format. Our coding team consisted of one native Kiswahili speaker who consulted the Kiswahili audio and answered team questions related to translation and coding for Kiswahili interviews; however, it is possible that some nuance was lost in the translation to English.

Conclusion

Task-shifting offers an effective and potentially sustainable solution for closing the mental health treatment gap in lower-resource settings; however, its scale-up and sustainment is limited by the need for ongoing supervision. Lay counselors and supervisors highlighted key benefits and challenges of using mobile phones and offered 27 distinct solutions to improve mobile phone supervision. Our findings underscore the benefits—and limitations—of co-designing solutions to improve the use of digital health tools and increase digital health equity and can serve as a foundation for future work that addresses barriers to mental health care in LMICs. We raise important considerations regarding human-centered design and digital health equity as it pertains to working with lay mental health counselors in Western Kenya.

Chapter 3. PILOT TRIAL RESULTS

Methods

Study Design

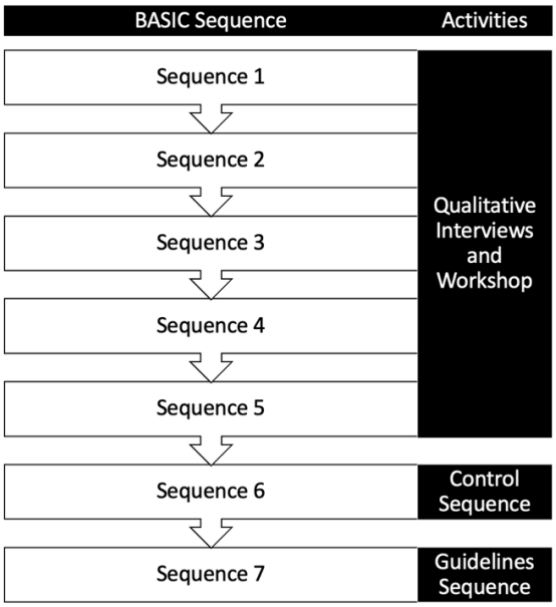
To develop and evaluate implementation guidelines for mobile phone supervision, we made use of the parent study's stepped-wedge cluster-randomized design. In brief, the parent trial (BASIC) comprised seven sequences, in which a total of 40 schools and 40 communities surrounding the schools were randomized to begin TF-CBT implementation at seven different time points throughout the study. All lay counselors were randomized and assigned to clusters at the beginning of the parent trial. Randomization was done at the cluster (i.e., community) level by a US-based study team member. Counselors from sequences one through five of the BASIC trial were randomly selected to participate in qualitative interviews regarding their experiences using mobile phones for clinical supervision, which included strategies to improve use. All BASIC supervisors also participated in interviews regarding their experiences using mobile phones to provide supervision. These results are reported in Chapter 2.

Following interviews and thematic analysis, results were presented back to interview participants for member-checking at an in-person workshop. BASIC trial supervisors presented back results from the semi-structured interviews and led discussion with lay counselors on any additions, edits, or clarifications they felt were needed for the themes. This workshop also included other human-centered design activities, which aimed to engage participants and determine how interview findings could be translated into actionable solutions for counselors for the implementation guidelines. Counselors worked in groups to develop and discuss potential solutions or strategies to facilitate mobile phone supervision. Groups shared their solutions with the larger group, then the larger group discussed the presented solutions and ways to refine them.

Following the retreat, the supervisors and principal investigator of the project reviewed all solutions and compiled them into a one-page document for supervisors and lay counselors to review together (the implementation guidelines). The supervisors decided to organize the guidelines under four goals: A) Explain to counselors that they will use in-person and mobile phone supervision together to ensure counselors are supported through delivery; B) Ensure counselors get all the information and support that they need through mobile phone supervision; C) Plan for any challenges with network connection; and D) Decrease distractions and disruptions during mobile phone supervision. The co-development process occurred while sequence six of the BASIC trial was implementing TF-CBT, and they served as a no-guidelines control group. After the guidelines were developed, they were implemented with all counselors in sequence seven. This process is depicted in Figure 3.1. The Institutional Review Boards (IRB) at the University of Washington and Kenya Medical Research Institute approved all study procedures.

Figure 3.1

Trial Sequence and Activities.



Implementation Guidelines

The formatted implementation guidelines are presented in Appendix B. One example goal and corresponding strategies are also presented in Table 3.1. As described above, the guidelines included multiple strategies that were clustered under the four goals. Supervisors shared the guidelines document with sequence seven counselors in a brief educational outreach visit immediately prior to beginning TF-CBT delivery and used to guide implementation. This visit coincided with other implementation planning procedures for the BASIC trial. In the visit, supervisors introduced and discussed the guidelines with counselors. All strategies were presented as optional, and counselors were encouraged to select and attempt strategies that they felt best matched their unique school and community contexts. Counselors were not required to implement any solutions, and there was no expectation of continued follow-up from supervisors.

Table 3.1

Sample Implementation Guidelines for Goal A

***Goal A*: Explain to counselors that we will use in-person and mobile phone supervision together to ensure they are supported through PT delivery.**
A1. We will provide in-person supervision at least four times during PT delivery. This will be at the beginning, middle, and end of PT groups • Supervision will be provided through mobile phone throughout the PT program. Counselors should feel free to use their mobile phones to communicate with their supervisors for support at any point during the program. A2. If you need additional support, you may request that your supervisor comes for additional in-person supervision visits. • Other counselors have requested support when facing challenges with certain topics or clarifying the goals of the PT program.

Participants

Participants included lay counselors recently trained in and subsequently delivered TF-CBT as part of the parent trial (N=59; 29 teachers; 30 CHVs). All parent trial supervisors were

also participants (N=3). Lay counselors and supervisors were delivering TF-CBT as part of sequences six and seven from the BASIC parent trial. There were no exclusion criteria. All participants provided informed consent at the time of enrollment.

Procedure

We compared acceptability, feasibility, and usability measures of mobile phone supervision from counselors in sequences six and seven of the parent trial. Lay counselors in sequence six (n= 29) did not receive any additional support or guidelines for mobile phone supervision. Lay counselors in sequence seven (n= 30) received the implementation guidelines document. Supervisors reviewed and discussed the guidelines with sequence seven lay counselors before they began TF-CBT delivery. Per the parent trial protocol, in-person supervision happened at least four times during each TF-CBT group (8 weeks). Through both sequences, supervisors were also available to conduct additional in-person supervision as needed with lay counselors. The manipulation was solely the introduction of guidelines and an educational outreach visit to support successful supervision by mobile phone. Lay counselors in both sequences completed measures of mobile phone supervision acceptability and feasibility, as well as a measure of usability, after delivering two rounds of TF-CBT. All three supervisors and a randomly selected sub-sample of lay counselors from sequence seven (N=12; six teachers; six CHVs) also participated in qualitative interviews to gather more information on their experience with the guidelines and perspectives on mobile phone supervision. The final interview guide is included in Appendix C.

Measures

Measures were adapted from existing measures, prioritizing acceptability and feasibility measures already translated and used cross-culturally in the parent trial (i.e., BASIC) and other

studies globally. All adaptations to the usability measure were made following established procedures to ensure common understanding of the construct (Dorsey, Gray, et al., 2020) and completed in consultation with longstanding Kenyan partners on the trial. To specifically assess mobile phone supervision, items were adapted slightly, such that mentions of "intervention" were replaced with the appropriate term for mobile phone supervision, as decided by community partners (e.g., "mobile phone supervision was appealing" and "mobile phone supervision seems workable").

Acceptability

The four-item Acceptability of Intervention measure (Weiner et al., 2017) was adapted and used to assess lay counselor perspectives of mobile phone supervision acceptability (e.g., "I like mobile phone supervision"). Scores range from 1 to 5, with higher scores representing greater acceptability. This brief, pragmatic measure has acceptable internal consistency and test-retest reliability in other samples (Weiner et al., 2017), and had good internal consistency in our sample ($\alpha = 0.89$).

Feasibility

The four-item Feasibility of Intervention measure (Weiner et al., 2017) was used to assess lay counselor perspectives of mobile phone supervision feasibility (e.g., "Mobile phone supervision seems doable in this school/community"). Scores range from 1 to 5, with higher scores representing greater feasibility. This measure has acceptable internal consistency and test-retest reliability in other samples (Weiner et al., 2017), and had excellent internal consistency in our sample ($\alpha = 0.93$).

Usability

The 10-item Intervention Usability Scale (IUS) (Lyon et al., 2020) was used to assess lay counselor perspectives of mobile phone supervision usability (e.g., "Mobile phone supervision

was easy to use"). Scores range from 1 to 5, with higher scores representing greater usability. The IUS has acceptable internal consistency in other samples (Lyon et al., 2020), and had good internal consistency in our sample ($\alpha = 0.87$).

Analysis

We present descriptive statistics (mean, standard deviation, range) to understand counselor and supervisor ratings of acceptability, feasibility, and usability following mobile phone supervision. We also conducted independent samples t-tests to compare average ratings of acceptability, feasibility, and usability across sequences that did and did not receive the guidelines and educational outreach visit. Following best practices for smaller sample sizes (Weissgerber et al., 2016), quantitative data is also visualized to better illustrate any outliers and differences in scores, including differences between sequences six and seven. All visualized data is also stratified by sector (teachers in Education; CHVs in Health) to reflect perceptions of lay counselors situated within two different contexts. This was intentional and pre-planned, as lay counselors in each system may face different challenges because of their job roles, level of resources, and positionality within their communities (e.g., teachers make more money and tend to occupy higher status roles than CHVs). All quantitative analyses were conducted using R (R Core Team, 2022).

Recordings from interviews were transcribed and identifying information was removed. Transcripts were coded in Dedoose (QSR International Pty Ltd., 2018) by researchers in the US and Kenya. Analysis followed Braun & Clarke's (2006) six-phase framework for thematic analysis (Braun & Clarke, 2006). Kiswahili interviews were translated by native Kiswahili speakers and trained translators. To develop an initial codebook, coders reviewed three transcripts independently, then met to identify potential codes and produce an initial codebook.

This codebook was subsequently applied and refined on the remaining interviews. All coding was done independently, and consensus was reached through group dialogue (Hill et al., 1997). We followed a QUAN → qual mixed methods approach for data explanation, using the embedded qualitative data to elaborate on or contextualize quantitative results (Palinkas et al., 2011).

Results

Sample Demographics

Our sample included 29 teachers and 30 CHVs who delivered TF-CBT in sequences six and seven of the BASIC trial (Table 3.2). Counselors in the control (i.e., no guidelines or educational outreach visit) condition (sequence six) were mostly female (62.1%), had completed secondary education (26.7%) or held a diploma certificate (26.7%), and were on average 42.9 (SD = 7.3) years old. Counselors in the guidelines and visit condition (sequence seven) were mostly female (60.0%), had completed secondary education (43.3%) or held a certificate (30.0%), and were on average 40.9 (SD = 6.7) years old. Less than half (51.7% control, 33.3% guidelines) reported receiving some prior training in psychosocial counseling; although, no counselors had prior experience with TF-CBT or other evidence-based interventions for child and adolescent mental health problems. More than half reported having some experience working with children/adolescents outside their current role (75.8% control, 80.0% guidelines), and experience working with parents/guardians (82.8% control, 66.7% guidelines).

Table 3.2

Demographics & Baseline characteristics

	No Guidelines Sequence Six (*n*=29)	**Guidelines Sequence Seven (*n*=30)**
Characteristic	***No. (%)***	***No. (%)***
Sector (Counselor Type)		
Education (Teachers)	14 (48.3)	15 (50.0)
Health (CHVs)	15 (51.7)	15 (50.0)
Sex		
Male	11 (37.9)	12 (40.0)
Female	18 (62.1)	18 (60.0)
Highest level of education		
Primary education	7 (24.1)	2 (6.7)

Secondary education	8 (27.6)	13 (43.3)
Certificate	2 (6.9)	9 (30.0)
Diploma Certificate	8 (27.6)	4 (13.3)
Master's degree	4 (13.8)	2 (6.7)
Received prior training in psychosocial counseling		
No	14 (48.3)	20 (66.7)
Yes	15 (51.7)	10 (33.3)
Provided prior psychosocial counseling		
No	6 (20.7)	11 (36.7)
Yes	23 (79.3)	19 (63.3)
Experience working with children/adolescents		
No	7 (24.1)	6 (20.0)
Yes	22 (75.9)	24 (80.0)
Experience working with parents/guardians		
No	5 (17.2)	10 (33.3)
Yes	24 (82.8)	20 (66.7)
	M (SD)	***M (SD)***
Age (in years)	42.9 (7.3)	40.9 (6.7)
Years of part-time psychosocial counseling experience	6.2 (3.7)[a]	8.7 (8.1)[b]
Years of full-time psychosocial counseling experience	0.04 (0.2)[a]	5.4 (9.3)[b]

[a] n = 23, [b] n = 19

Quantitative Results

Acceptability

Differences in mobile phone supervision acceptability between sequence six and sequence seven are presented in Table 3.3 and Figure 3.2. This figure also visualizes differences in counselors between type (i.e., teacher and CHV). Average mobile phone supervision acceptability for counselors in sequence six (i.e., those who did not receive guidelines) was 4.08 (out of 5; SD=0.34). Average acceptability for counselors in sequence seven (i.e., those who received guidelines) was 4.35 (SD=0.18). There was a statistically significant difference in acceptability between those counselors who did receive guidelines and those who did not, with those who received guidelines reporting greater acceptability [$t(57) = -2.05$, $p = .04$)].

Feasibility

Differences in mobile phone supervision feasibility between counselor type and sequence are presented in Table 3.3 and Figure 3.2. Average mobile phone supervision feasibility for counselors in sequence six (i.e., those who did not receive guidelines) was 3.78 (out of 5; SD=0.7). Average feasibility for counselors in sequence seven (i.e., those who received guidelines) was 4.15 (SD=0.29). There was no evidence of a significant difference in feasibility between those counselors who received and did not receive guidelines [t(57) = -1.92, p = .06)].

Usability

Differences in mobile phone supervision between counselor type and sequence are presented in Table 3.3 and Figure 3.2. Average mobile phone supervision usability for counselors in sequence six (i.e., those who did not receive guidelines) was 3.64 (out of 5; SD=0.55). Average feasibility for counselors in sequence seven (i.e., those who received guidelines) was 4.02 (SD=0.23). There was a significant difference in usability between those counselors who received guidelines and those who did not, with those who received guidelines reporting greater usability [t(57) = -2.34, p = .02)].

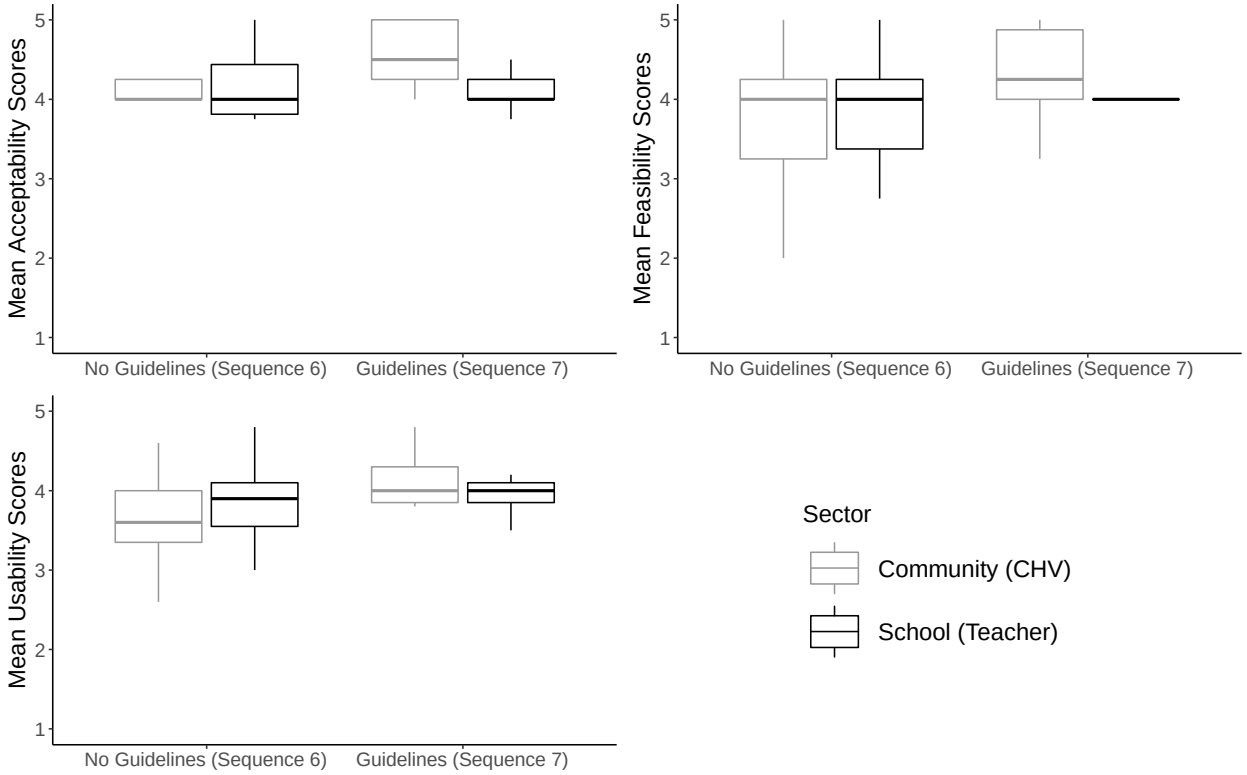
Table 3.3

t-test Results for Acceptability, Feasibility, and Usability

	No Guidelines (sequence six)		Guidelines (sequence seven)				
	M	**SD**	**M**	**SD**	***t*-value**	**df**	**p**
Acceptability	4.08	0.34	4.35	0.18	-2.05	57	0.04
Feasibility	3.78	0.79	4.15	0.29	-1.92	57	0.06
Usability	3.64	0.55	4.02	0.23	-2.34	57	0.02

Figure 3.2

Differences in Outcomes by Sector and Guidelines Condition.



Qualitative Results

Benefits of Guidelines

Lay counselors and supervisors in sequence seven described benefits of the mobile phone supervision guidelines, and specifically the benefits of having a dedicated educational outreach visit to discuss strategies to improve mobile phone supervision prior to its implementation. The qualitative themes on benefits of the guidelines and visit included: setting expectations for mobile phone supervision; emphasizing the importance of mobile phone supervision; increasing comfort with mobile phone supervision; and, sharing strategies for mobile phone supervision

Setting Expectations for Mobile Phone Supervision. A key benefit of the guidelines and visit was setting expectations for counselors during mobile phone supervision. Guided by the

guidelines document (see Goal A), supervisors discussed what counselors might expect during mobile phone supervision and worked to collaboratively set expectations for how supervisors and counselors themselves would approach mobile phone supervision, including expectations for carrying phones and ensuring their phones were working. As one counselor described, “this meeting revealed to me… that everyone is required [to have a phone], if you do not have a phone, try your best to have a phone so that any info comes from a supervisor [you won’t miss it]…” Counselors and supervisors also discussed how the educational outreach visit enabled them to set expectations for scheduling and rescheduling mobile phone supervision, which ultimately led to more successful mobile phone supervision meetings. One of the trial supervisors explained and noted the benefits in comparison to previous sequences: “The other times before we did these meetings of mobile phone supervision, we were just calling [counselors]. We want to have a meeting and maybe they're in somewhere where there's no network or poor connection. So, communicating was a challenge. But now due to these meetings, it made communication work better because now we were planning earlier before the calls.” As one counselor stated, “the meeting enabled us to set our goals. And to know actually the challenges that we are going to meet [with mobile phone supervision].”

Emphasizing the Importance of Mobile Phone Supervision. A second benefit of the guidelines and visit was emphasizing the importance of mobile phone supervision to the lay counselors. As one supervisor described, having educational outreach visits and discussions about mobile phone supervision before beginning treatment delivery “let the counselors know that it's not all about in-person [supervision]. Because initially, [counselors] were thinking that supervision is mainly important if it's in person, but then they took the phone supervision more seriously.” Counselors also noted how the visit and guidelines influenced their perceptions of the

importance of mobile phone supervision, with one counselor explaining that "[they] had never been subjected to telephone supervision [before this program]... But, this time [their] supervisor was able to teach [them] the importance of having telephone supervision..." Defining the importance of telephone supervision was closely related to setting expectations for supervision, as counselors and supervisors both noted that setting expectations for carrying phones and being available for phone supervision meetings reinforced the importance of mobile phone supervision. One counselor expanded: "I realized that the phone should be on because there might be an emergency, or we might need to come and teach the children... the phone must be on so we can contact [our supervisor]."

Increasing Comfort with Mobile Phone Supervision. Increasing comfort with mobile supervision was another important benefit from the guidelines and educational outreach visit for many counselors. This was facilitated by a variety of factors, including decreasing counselor anxiety surrounding mobile phone supervision and increasing comfort with using specific strategies. Regarding decreasing anxiety, counselors reported to have feared calling and getting something wrong or inconveniencing their supervisors; however, as one counselor reported, "[the meeting] put me in a good position to talk on the phone, getting used to doing something like a telephone interview without trembling." One supervisor confirmed this benefit, describing the educational outreach visit as, "a way to make [the counselors] feel at ease… to communicate to us over the phone." Counselors noted that the supervisors' emphasis on ensuring that counselors received all the support they needed contributed to increased comfort with mobile phone supervision: "[The supervisor] just told us to be free, to feel free, to always ask in case we get any problem, not to keep quiet. So, we were just free with [them]." This increased comfort was essential for counselors to engage in all the mobile phone supervision strategies, including

those that were intended to reduce counselor airtime usage, such as flashing and reverse calling. Flashing required lay counselors to call and quickly hang up such that their supervisor's airtime was charged as opposed to their own. Reverse calling is a specific way of dialing that charges the recipient's airtime. As one supervisor noted, "we made them comfortable to flash us initially. Initially, [the counselors] were like, sometimes they didn't have their time, so I made the counselors comfortable to just flash me."

Sharing Strategies for Mobile Phone Supervision. A final and crucial benefit of the guidelines and educational outreach visit was sharing strategies for mobile phone supervision. The experience of receiving mobile phone supervision was new for counselors, who noted the benefits of not only learning to use phones but also strategies to make their use easier: "We were taught on how we were to use the phones. Now these are the strategies on how we were to use [them]." As one supervisor explained, not all the strategies were new or things that counselors might not have done already. Rather, the educational outreach visit was a more comprehensive and efficient way of sharing strategies that might have naturally occurred later: "There was a lot of new information, and it was helpful… Without the meeting, we could have done some of the activities, like making reminder phone calls, but it could have not created as much emphasis, and they could have not gotten as much more information as they did during the meetings." The strategies referenced spanned across all four goals of the guidelines document.

Goals and Strategies

In describing the benefit of sharing strategies for mobile phone supervision, counselors and supervisors referenced strategies that aligned with each guidelines document goal. Below we report the strategies described by counselors and supervisors and organize them by the goals they were intended to help achieve: A) explain logistics of mobile phone supervision; B) ensure

counselors get all needed information and support; C) plan for challenges with network connection; and, D) decrease distractions and disruptions.

Goal A: Explain Logistics of Mobile Phone Supervision. Counselors and supervisors referenced both strategies to achieve Goal A during their interviews on the impact of the mobile phone supervision guidelines. Among the most frequently mentioned (relative to the overall goal) were requests for in-person supervision, in which counselors noted that having this option was essential in building their confidence and supporting them in handling clinical challenges: "As I was delivering the lesson, the girls were so emotional… I was talking about the 'triggers…' It was even difficult for me to continue with the lesson. So, I called my supervisor… [they] told us what we were supposed to do with the girls. And [they] even came and talked to the girls." Another counselor noted that they requested an in-person supervision visit to "see if [they were] doing things right… [they] could phone [the supervisor], and tell [them] that, 'Please, I want you to attend my lesson and say how I'm going to deliver it.'" This flexibility and additional support were crucial for supporting counselors as they assumed new counseling roles and the associated emotional difficulties.

Goal B: Ensure Counselors get all Needed Information and Support. Counselors and supervisors also referenced all strategies to achieve Goal B during interviews. Counselors frequently mentioned the importance of sharing contact information at the educational outreach visit, both with supervisors and co-counselors. They also discussed how they would vary their communications between phone calls, SMS, and WhatsApp messages. Each medium had different advantages, with calls often providing greater clarity than messaging, but messaging being more accessible with limited network signal, limited airtime, or when counselors were attending to other responsibilities and unable to answer phone calls. One strategy that was

stressed to ensure all counselors were receiving information was to communicate messages to the entire group, either via similar yet separate messages, singular messages to the entire group, or even group calls (i.e., conference calls or calling one counselor and having them place their phone on speaker). Counselors discussed how this helped them to not miss important information from their supervisors, "We could not worry because at least the three of us, there is no way we could [all miss messages]." Another counselor noted that group communications also had the benefit of facilitating learning between counselors: "I learn more because in the, that is WhatsApp, we are in a group, then we share. And as you are sharing that with our supervisor, you get more information from other co-teachers."

A crucial piece of ensuring counselors received all needed information and support was ensuring that their phones were supplied with airtime, charged, and working. To address airtime shortages, counselors discussed various strategies to communicate when their airtime was low, such as "reverse calling" (i.e., calling and charging the recipient's airtime), "flashing" (i.e., calling and hanging up quickly such that the other person returns the call and charges their own airtime), and sending a free "please call me" text message to supervisors. As one counselor described, "So, we were told in the meeting that in case we don't have airtime, you are just supposed to flash or even use WhatsApp. We have please call, send a please call me. And our supervisor will call us back." Counselors were also coached on strategies to ensure their phones remained charged and minimize battery use. As one counselor explained, "My phone battery is good. When I charge, if it is evening it will stay charged till night. That's when I will charge again. And on a day [when I have supervision], I would charge and just put it off when not in use. So, the battery will just be protected until when my meeting activity would end."

Goal C: Plan for Challenges with Network Connection. Counselors and supervisors referenced both strategies to achieve Goal C during interviews. Counselors mentioned the importance of updating their phones and SIM cards to improve their network connection. Counselors also indicated that the educational outreach visit was helpful in facilitating their identifying locations with strong network connection where they could take mobile phone supervision calls and receive messages. One counselor noted, "I also learned that I have to find a good place where the network is stable to talk to the supervisor for things to be better..." For some counselors, having scheduled mobile phone supervision meetings (another strategy) was also important to ensure they could be in a location with network connection: "there's just a particular point where we have the network… Unless you go to a certain point, then you will not realize that somebody tried to call you. So, [the guidelines] forced us to make sure that at a certain time, you need to move somewhere at a certain point so that you get some communication."

Goal D: Decrease Distractions and Disruptions. Counselors and supervisors referenced all strategies to achieve Goal D during interviews. Given that counselors frequently completed supervision meetings at the schools in which they delivered treatment, they noted the importance of identifying quiet and secure places to have supervision phone calls: "during the meeting [the supervisor] also told us to make sure that we are confidential… to make sure that when we decide that we have to make a call, we were to look for a quiet place. You know schools have noise and maybe it is during lunch time or break time... So, we were supposed to look for at least a private place, a quiet place." This also highlights important considerations for confidentiality with mobile phone supervision. Advance notice of when supervision would occur was crucial for counselors to go to these locations on the school ground, prepare themselves, and notify others

that they would be busy with mobile phone supervision. One counselor noted, “I can also tell those who are around, who may make noise, that I have [supervision] now, let us not be noisy. So that when we start, we do not get any disturbance… If they are children, they do not come near.”

Discussion

Co-developed implementation guidelines and educational outreach visits were associated with improved acceptability and usability of mobile phone supervision. Qualitative interviews with lay counselors and supervisors contextualized how the guidelines and visits impacted acceptability and usability—by setting expectations for mobile phone supervision, emphasizing its importance, increasing comfort, and sharing strategies to improve mobile phone supervision. In discussing how specific strategies were utilized across different contexts, interviews show how the guidelines were implemented across contexts and highlight the flexibility of our approach. Our approach included two minimally-intensive, discrete implementation strategies: introduction of co-developed implementation guidelines and brief discussion and planning with supervisors. Our intent was to design an approach with great potential for scalability. Our results indicate that, with some flexibility and minimal support around their introduction and dissemination, guidelines may be a viable tool to implement and sustain some clinical innovations or implementation strategies across areas with varying levels of resources.

Given the documented challenges with implementing and sustaining interventions and their components (e.g., mobile phone supervision), there have been calls for greater research on how to best tailor implementation support (Baker et al., 2015; Powell et al., 2017; Waltz et al., 2019). Research has examined implementation support approaches that identify and match implementation strategies to address specific determinants prior to implementation (Baker et al., 2015) as well as more intensive approaches to provide individualized, on-going implementation support, such as implementation facilitation (Smith et al., 2022) and technical assistance (Katz & Wandersman, 2016). Though effective, there may be challenges with implementing or scaling complex, multi-faceted implementation strategies in lower-resource settings. Implementation

guidelines alone may be a more scalable strategy in lower-resource settings, but they often lack flexibility and tailoring to different contexts (Peters et al., 2022). We expand the existing research by examining the effect of a pragmatic multi-faceted implementation strategy: co-developed implementation guidelines for mobile phone supervision and brief educational outreach visits. Incorporated into our guidelines were multiple suggested strategies for improving mobile phone supervision, thereby providing guidance to counselors while accounting for needed flexibility and tailoring to different contexts (e.g., multiple options for communicating with different levels of network bandwidth).

In comparing our approach and benefits to other implementation strategies, we highlight the importance of scalability, flexibility, and autonomy in tailoring implementation supports. Our guidelines, which were developed, disseminated, and implemented by lay counselors and supervisors in Kenya, increased the acceptability and usability of mobile phone supervision with minimal resources and time. Noting resource constraints and the need for scalability, we were guided by the concept of "minimal intervention needed to produce change" (Glasgow et al., 2014). Though formative work was completed to develop the implementation guidelines (Chapter 2), the educational outreach visits were fully integrated into existing research and clinical activities. Supervisors conducted educational outreach visit within their existing in-person supervision meetings, adding approximately 30 minutes to one meeting. Lay counselors were supplied with the paper guidelines documents, but they were not required to track strategies or evaluate their own fidelity to the strategies. Increasingly, implementation and intervention researchers are trying to understand how little support or intervention can be provided to achieve desired impacts (Glasgow et al., 2014; Lyon et al., 2022; Schleider et al., 2020). Our approach of

implementation guidelines and educational outreach visits was designed with this in mind, prioritizing pragmatism and scalability with minimal resources.

Our approach also prioritized flexibility and empowerment of lay counselors and supervisors. Children's mental health implementation research has often only consulted with stakeholders to understand challenges following implementation efforts, which limits the ability of researchers to empower stakeholders, preempt challenges to EBP implementation, and ensure implementation success (Triplett et al., 2022). Conversely, our approach empowered lay counselors and stakeholders to develop their own guidelines. It also allotted for flexibility and daily tailoring within guidelines by lay counselors and supervisors. Lay counselors could themselves select and tailor strategies and even implement different strategies depending on circumstances. For example, a counselor may choose to regularly call their supervisor. However, in the event of a storm that disrupts network connection, knowing other strategies and having the flexibility to try other, lower bandwidth strategies is important. As research continues to explore how to tailor interventions and implementation supports for contextual determinants, it is important to empower and enable stakeholders to tailor their own interventions and supports with flexibility to iteratively test and refine strategies.

As demonstrated by quantitative results and contextualized by qualitative interview themes, our approach was associated with greater acceptability of mobile phone supervision. Our approach was intended to be minimally intensive and flexible so that it they be implemented across communities with differing levels of resources. Yet, this level of support left counselors with clarity on their expectations for mobile phone supervision and increased their comfort with it. As interview quotations illustrate, this increased comfort enabled them to seek and receive more support while implementing the intervention. Much of the existing literature on

acceptability has focused on the acceptability of interventions to stakeholders (Lewis et al., 2015). However, it is also important to investigate the acceptability of implementation strategies (Proctor et al., 2013), particularly those that may be critical to implementation and eventual sustainment, such as mobile phone supervision. Others have noted the interplay between interventions, implementation strategies, and context, calling for greater understanding of the interactions between the three in implementation research (Kemp, Wagenaar, et al., 2019). Closer examinations of the acceptability of implementation strategies in context may be particularly important with lay counselors or other frontline implementers in efforts to implement interventions in lower-resource areas. Particularly given the power dynamics inherent in both global mental health and implementation science research, where researchers often put forward EBPs to implement, it is important to assess and potentially improve the acceptability of interventions and implementation strategies.

Implementation guidelines and educational outreach visits were also associated with improved mobile phone supervision usability (i.e., the perception that mobile phone supervision was easy to use and learn, and counselors' confidence in their ability to use mobile phones for supervision). Increasingly, scholars are advocating for greater assessment of the usability of interventions (Lyon et al., 2020) and implementation strategies (Dopp et al., 2019; Lyon et al., 2019, 2021). As access to mobile phones and digital health interventions continues to increase around the globe (Kemp, Petersen, et al., 2019; Naslund et al., 2017, 2019), it becomes increasingly important to attend to the usability of digital health interventions and other digital health solutions. Our approach was an incredibly usable implementation strategy. Though it was multifaceted, it blended only two discrete implementation strategies, each of which required minimal additional resources. Because of the level of required resources and flexibility, lay

counselors and supervisors were about to effectively and efficiently introduce and implement the guidelines to improve mobile phone supervision.

There is no evidence that the introduction of guidelines and the educational outreach visits were associated with significant changes in mobile phone supervision feasibility. There are significant challenges in implementing digital health solutions in LMIC (Kusimba et al., 2015; Murphy & Priebe, 2017; Wyche & Olson, 2018), including with lay counselors (Chapter 2). Challenges vary greatly, even within studies and similar geographic regions. Interestingly, though average feasibility ratings were high, there was great variability in lay counselor reports of feasibility across both sequences, meaning counselors varied more in their perception of mobile phone supervision as compared to acceptability or usability. This again highlights the importance of flexible approaches that allow tailoring to individual contexts, given that initial perceptions of feasibility may be discrepant across contexts.

Given contextual realities, our approach could not address all the barriers to mobile phone supervision. The guidelines most often included short-term solutions to challenges that could be implemented with minimal resources. Other potentially viable strategies to improve feasibility may have included the provision of additional resources (e.g., phones or airtime) or formal workload adjustment to allow for lay counselors to receive supervision. There was no intervention on structural challenges (e.g., network coverage), which gave rise to the barriers and could ultimately impact feasibility. Instead, as evidenced in the qualitative findings, the guidelines' focus on individual actions supported counselors through challenges. It did not remove them. Though these types of solutions may be necessary in the present, it should be stressed that equitable and sustainable implementation of mental health interventions,

particularly when projects are driven by US investment in lower-resource areas, must also aim to address the structural and systemic factors that have created and maintain inequities.

Limitations

These findings should be considered within the context of their limitations. Our implementation guidelines were co-developed alongside lay counselors and supervisors from previous sequences in the trial and were very specific mobile phone supervision in Kenya. While we believe the flexibility and rationale underlying the approach would extrapolate well to other settings, interventions, or implementation strategies, further research is needed to evaluate similar approaches across contexts. This work should similarly aim to engage and empower stakeholders across contexts and design and adapt solutions with those contexts in mind. Similarly, though the cluster-randomized trail design may have protected against some threats to validity in terms of participant selection, our design cannot account for natural improvements in mobile phone supervision that might have occurred due to the progression of time (i.e., historical threats to validity). With respect to qualitative interviews, our number of supervisors for the study is limited (n=3), which impacts our ability to extrapolate from supervisor interviews. This limitation also underscores the importance of identifying strategies to support mobile phone supervision. Finally, our coding team consisted of one native Kiswahili speaker who consulted the Kiswahili audio and answered team questions related to translation and coding for Kiswahili interviews. However, it is possible that some nuance in conversations was lost in the translation to English.

Conclusion

Mobile phones may present an opportunity to increase access to lay counselor supervision; however, implementation of mobile phone supervision must acknowledge and address contextual barriers. This study explored the impact of a pragmatic multi-faceted implementation strategy—co-developed implementation guidelines and educational outreach visits—on the acceptability, feasibility, and usability of mobile phone supervision for lay counselors in Kenya. The approach significantly impacted the acceptability and usability of mobile phone supervision. Qualitative interviews with lay counselors and supervisors contextualized how the guidelines and educational outreach visits impacted acceptability and usability—by setting expectations for mobile phone supervision, emphasizing importance, increasing comfort, and sharing strategies to improve mobile phone supervision. In discussing how specific strategies were utilized across different contexts, interviews highlight the benefits of co-developed and flexible implementation supports. Together, results highlight the importance of minimally intensive and flexible implementation supports that can be tailored across contexts and empower stakeholders to select and implement their own solutions. Importantly, we argue this must not come at the cost of addressing structural issues that give rise to downstream barriers. Both elements are crucial to ensuring interventions can be implemented and sustained across areas with varying levels of resources.

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APPENDIX A: CHAPTER 2 INTERVIEW GUIDE

INSTRUCTIONS FOR PARTICIPANT:

Thank you for being willing to do an interview with us. We will be asking you some questions about your experience using mobile phones to communicate with your supervisor in your role as a Pamoja Tunaweza counselor. This interview will take about ***one hour*** *to complete and will be* ***audio recorded for the purposes of transcription only and also not to miss out on any important information you give us****. Your answers will help us learn how to better support Pamoja Tunaweza delivery in schools. There are no right or wrong answers, we want to hear your honest opinions. Your individual responses are confidential and will not be shared with your Head Teacher, anyone from your school, your teacher coach, or the Ace Africa supervisors. Your answers will not impact any funding or resources you receive from your school or Ace Africa. Your responses will not be attached to your name or your school's name. They will only be attached to a study ID number, and will only be viewed by the research team. Your responses will only be used to improve support for Pamoja Tunaweza. As a participant, you will receive 500 ksh for completing this interview.*

For this interview, ***we are interested in learning about your experience using mobile phones to communicate with your supervisor in your role as a Pamoja Tunaweza counselor.*** *When we talk about communicating with your supervisor using mobile phones, we mean any way you have communicated with supervisor in relation to Pamoja Tunaweza supervision. This may include phone calls, SMS, WhatsApp messages, or any other way of communicating with your supervisor with your phone about Pamoja Tunaweza supervision. Please think about* ***all*** *these activities when you're answering questions about mobile phone supervision. We will be asking about what you liked about communicating with your PT supervisor through your mobile phone, the challenges you faced, and what could be improved.*

1. Please think about the entire time you have been a Pamoja Tunaweza counselor. Tell me about your experience using mobile phones to communicate with your supervisor in your role as a Pamoja Tunaweza counselor.

2. What do you <u>like most</u> about communicating with your Pamoja Tunaweza supervisor through your mobile phone about Pamoja Tunaweza supervision?

3. What is <u>challenging or frustrating</u> about communicating with your Pamoja Tunaweza supervisor over your mobile phone?

> ***<u>Follow-up question:</u>*** **How did you overcome those challenges?**

4. How <u>possible</u> do you think it would be to replace your current in-person supervision with supervision through mobile phones? We'll use a scale of 1-10, with 1 being <u>not at all possible</u> and 10 being <u>extremely possible</u>.

Follow-up question: You've just given me a rating of [the rating]. Tell me more about why you chose that?

5. What situations would you need face-to-face supervision and would not want that to be replaced by mobile phone supervision?

6. What would make it easier for you to receive supervision by your mobile phone?

7. How satisfied would you be replacing in-person supervision with supervision using mobile phones? We'll use a scale of 1-10, where 1 is not at all satisfied and 10 is extremely satisfied.

Follow-up question: You've just given me a rating of [the rating]. Tell me more about why you chose that?

8. What would make you more satisfied with receiving supervision over your mobile phone?

9. Imagine you are preparing for a Pamoja Tunaweza group or individual visit and need support with a specific skill or step sheet for a visit. Please tell me like a story, step-by-step, how you would contact your supervisor to receive support over your phone?

10. Is there anything else about receiving supervision by your mobile phone that I haven't asked about that you'd like to share?

APPENDIX B: MOBILE PHONE SUPERVISION BEST PRACTICES

Mobile Phone Supervision Meeting: Soon after counselors have finished the Pamoja Tunaweza (PT) training. This will happen at the same time as Coaching Meeting 2. Now that counselors have been trained, they probably have additional questions for you that are important for finding solutions to support mobile phone supervision for PT.

Date of Meeting: _____ Site: _____

Counselor IDs: _____

Planning Solutions to Support Mobile Phone Supervision

There are 4 goals for this meeting. Goals are listed below, with the strategies/solutions used by counselors in Steps 1-5; however, each new community can always identify their *own* new solutions. Ideally each solution plan that will support mobile phone supervision should be tailored to fit the unique community. In your conversation, please consider the unique aspects (urban or rural setting etc.) that may influence the solutions that will be best for them. For example, more urban schools may have fewer problems with network connection.

***Goal A*: Explain to counselors that we will use in-person and mobile phone supervision together to ensure they are supported through PT delivery.**

A1. We will provide **in-person supervision at least four times during PT delivery**. This will be at the beginning, middle, and end of PT groups.
- Supervision will be provided through mobile phone throughout the PT program. Counselors should feel free to use their mobile phones to communicate with their supervisors for support at any point during the program.

A2. If you need additional support, you may **request that your supervisor comes** for additional in-person supervision visits.
- Other counselors have requested support when facing challenges with certain topics or clarifying the goals of the PT program.

***Goal B*: Ensure counselors get all the information and support that they need through mobile phone supervision.**

B1. Supervisors and counselors should save each other's **contact information**.
- Counselors should also save each other's contact information so that they can communicate and plan for PT groups together.
- If counselors change phone numbers, then they should communicate that to their supervisors and counselors, who will update their contact information.

B2. Supervisors may use **phone calls, SMS, and WhatsApp messages** to communicate with counselors.

B3. Supervisors will **communicate important messages to the entire group** via group calls, group SMS, or WhatsApp groups.
   - Supervisors will message counselors individually for personal matters, and counselors can feel free to reach out individually for personal support.

B4. Supervisors will communicate in **suitable language**.
   - Supervisors will use the language of the counselors choosing (e.g., Swahili or English).

B5. Counselors shall be supplied with **airtime** and can request that supervisors call them to preserve their own airtime.
   - Counselors can "reverse call," "flash," or send a "please call me message" to their supervisors when their airtime is low.

B6. Counselors should **ensure their phones are charged** for supervision.
   - Other counselors have used power banks, solar power, or back-up batteries to ensure their phones are charged for supervision.

***Goal C*: Plan for any challenges with network connection.**

C1. Counselors should ensure their **phones are updated** for the best network connection.
   - Counselors can update their phones by switching off and back on.
   - Counselors should ensure their SIM cards are updated (example: 3G or 4G) for strongest network connection.

C2. Counselors should **identify places near their schools with strong network connection**.
   - If counselors have multiple SIM cards, they should check for the strongest connection on either network.

***Goal D*: Decrease distractions and disruptions during mobile phone supervision.**

D1. Counselors should find a **private and quiet place for supervision** phone calls.

D2. **Supervisors will notify counselors in advance** when they will be having mobile phone supervision.
   - Counselors should notify supervisors if they need to reschedule supervision via message or call.

D3. Counselors should **notify others that they will be taking a supervision** phone calls.
   - Counselors shall delegate work responsibilities if necessary.
   - Counselors should turn on "call waiting" so that they do not get other calls during supervision.

D4. In the event of **weather and poor network, counselors shall SMS supervisors** to reschedule.

APPENDIX C: CHAPTER 3 INTERVIEW GUIDE

INSTRUCTIONS FOR PARTICIPANT:

Thank you for being willing to do an interview with us. We will be asking you some questions about your experience using mobile phones to communicate with your supervisor in your role as a Pamoja Tunaweza counselor. This interview will take about ***one hour*** *to complete and will be* ***audio recorded for the purposes of transcription only and also not to miss out on any important information you give us****. Your answers will help us learn how to better support Pamoja Tunaweza delivery in communities. There are no right or wrong answers, we want to hear your honest opinions. Your individual responses are confidential and will not be shared with your CHEW, anyone from your community, your teacher coach, or the Ace Africa supervisors. Your answers will not impact any funding or resources you receive from your community, school, or Ace Africa. Your responses will not be attached to your name or your community's name. They will only be attached to a study ID number, and will only be viewed by the research team. Your responses will only be used to improve support for Pamoja Tunaweza. As a participant, you will receive 500 ksh for completing this interview.*

For this interview, ***we are interested in learning about your experience in the meeting you and your co-counselors had with your supervisor to discuss mobile phone supervision and ways to improve it.*** *During this meeting, your supervisor reviewed a mobile phone supervision worksheet and discussed potential strategies to improve mobile phone supervision with you and your co-counselors. I have brought one of these sheets for your reference. We will also be asking about how this meeting impacted your experience receiving mobile phone supervision. This may include phone calls, SMS, WhatsApp messages, or any other way of communicating with your supervisor with your phone about Pamoja Tunaweza supervision. Please think about* ***all*** *these activities when you're answering questions about mobile phone supervision. We will be asking about what you liked about communicating with your PT supervisor through your mobile phone and the challenges you faced.*

1. On a scale of 1-10, with 1 being not at all useful and 10 being extremely useful, please rate how <u>useful</u> having a meeting to discuss how to use the mobile phone for supervision and ways to improve it was in helping you communicate with your Pamoja Tunaweza supervisor over your mobile phone.

1	2	3	4	5	6	7	8	9	10	DK
Not at all useful				Moderately useful					Extremely useful	

<u>Follow-up question:</u> **You've just given me a rating of [the rating]. Tell me more about why you chose that?**

2. How did this meeting impact how <u>possible or feasible</u> it was to communicate with your Pamoja Tunaweza supervisor over your mobile phone?

3. What strategies that you discussed with your supervisor were <u>most helpful</u> for you to receive mobile phone supervision in your community?

4. What strategies that you discussed with your supervisor were not helpful for you to receive mobile phone supervision in your community?

5. How did the airtime, that you discussed that you would be receiving during the meeting, help you communicate with your Pamoja Tunaweza supervisor about Pamoja Tunaweza supervision?

<u>Follow-up question:</u> **Was the amount provided enough for you to communicate with your Pamoja Tunaweza supervisor?**

6. Are there any other supports that you needed for mobile supervision, but we were not able to provide?

7. Is there anything else about the meeting to discuss how to use the mobile phone for supervision that I haven't asked about that you'd like to share?

Please read the response options below to participants in a close-ended way. Please circle the counselor's responses below.

a) Do you have a smart phone?
- Yes; No.

b) Do you use WhatsApp to communicate with your supervisor about Pamoja Tunaweza? If so, how often?
- Daily; 3 or more times a week; Once or twice a week; About every two weeks; Once a month; Once every 2-3 months; Less than once every 2-3 months

c) Do you send audio messages about Pamoja Tunaweza to your supervisor over WhatsApp? If so, how often?
- Daily; 3 or more times a week; Once or twice a week; About every two weeks; Once a month; Once every 2-3 months; Less than once every 2-3 months

d) Do you send video messages about Pamoja Tunaweza to your supervisor over WhatsApp? If so, how often?
- Daily; 3 or more times a week; Once or twice a week; About every two weeks; Once a month; Once every 2-3 months; Less than once every 2-3 months

e) Do you call your supervisor? If so, how often?
- Daily; 3 or more times a week; Once or twice a week; About every two weeks; Once a month; Once every 2-3 months; Less than once every 2-3 months

f) [Follow-up to question e] Do you use WhatsApp to call your supervisors or regular phone calls?
- WhatsApp; Phone Airtime; Both

8. What do you <u>like most</u> about communicating with your Pamoja Tunaweza supervisor through your mobile phone about Pamoja Tunaweza supervision?

9. What is <u>challenging or frustrating</u> about communicating with your Pamoja Tunaweza supervisor over your mobile phone?

<u>Follow-up question:</u> **How did you overcome those challenges?**

10. Is there anything else about receiving supervision by your mobile phone that I haven't asked about that you'd like to share?

APPENDIX D: GENERALS REVIEW

Stakeholder Engagement to Inform Evidence-Based Treatment Implementation for Children's Mental Health: A Scoping Review

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Abstract

Background: There is a pervasive mental health treatment gap for children across the globe. Engaging stakeholders in children's mental health evidence-based treatment (EBT) implementation projects may increase the likelihood of successful EBT implementation, thereby addressing the treatment gap. However, little is known about the extent of stakeholder engagement to inform the implementation of children's mental health EBTs.

Methods: We conducted a scoping review to characterize stakeholder engagement in children's mental health EBT implementation projects, including *what* stakeholders are engaged, *how* they are engaged, *when* they are engaged, *where* they are engaged (i.e., location of projects), *why* they are engaged, and the reported *impacts* of engaging stakeholders. We searched seven databases: Medline, PsycInfo, Embase, ERIC, CINAHL Complete, Scopus, Web of Science Core Collection. To be included, projects had to report on some form of stakeholder engagement that was undertaken to inform or explain the implementation of a children's mental health EBT. We performed data extraction and synthesis to describe key study and stakeholder characteristics, stakeholder engagement methods and rationales, reported benefits of stakeholder engagement, and quality of reporting on stakeholder engagement.

Results: One hundred and twenty-two manuscripts met our inclusion criteria, from which we identified a total of 103 unique child mental health EBT implementation projects. Projects spanned 22 countries, which included low-, lower-middle, upper-middle, and high-income countries. The largest number of projects were in the United States and conducted in public mental health settings. Most projects engaged EBT providers during the active implementation EPIS phase and with limited depth, often gathering information from stakeholders without

sharing decision-making power. When reported, projects discussed the benefits of stakeholder engagement across all implementation outcomes.

Conclusions: Given that stakeholder engagement is often shallow and follows initial implementation efforts, additional effort should be made to increase engagement to preempt challenges to EBT implementation and ensure implementation success. Such efforts may ensure the just distribution of power in EBT implementation efforts and could be essential in addressing mental health disparities.

Trial Registration: All procedures were pre-registered on the Open Science Framework prior to conducting the literature search.

Keywords: Children's Mental Health; Evidence-Based Treatment; Stakeholder Engagement

There is a substantial burden of mental health disorders among youth around the globe. The estimated worldwide-pooled prevalence of mental health disorders among youth is 13.4% (Polanczyk et al., 2015). Estimates vary widely between contexts due to variations in presentation and measurement, which introduce challenges with accurately determining prevalence; however, prevalence estimates across continents range from 8.34% in Africa to 19.9% in North America (Polanczyk et al., 2015). Mental health disorders in youth can have pervasive effects on development as well as a negative impact on long term physical and mental health outcomes. It is estimated that approximately 50% of all lifetime mental health disorders begin by the age of 14 (Kessler et al., 2005), and there is substantial evidence suggesting continuity between youth and adult psychopathology (Thornicroft, 2012). Beyond chronic poor mental health outcomes, youth psychopathology has also been associated with poorer physical health outcomes (Aarons et al., 2008). The prevalence and associated negative effects of youth mental health disorders have led many to suggest that addressing youth mental health through evidence-based treatment (EBT) is a major public health priority (Collins et al., 2011).

Despite the high prevalence of youth mental health disorders and their associated negative impacts, there is a large mental health treatment gap around the globe. The gaps in access to mental health care are particularly striking in lower-resourced settings, including low-to-middle-income countries (LMIC) and minoritized communities in high-income countries (HIC; e.g., Black communities in the US). Fewer than 1% of youth in need receive mental health care in LMIC (World Health Organization, 2009). While mental health care is more accessible in HIC, tremendous disparities still exist. Nearly 50% of youth in need do not receive mental health treatment in the United States (Whitney & Peterson, 2019). Racial and ethnic minority children in the United States may be less likely to receive care than their White peers (Triplett et al.,

under review). Further, even when youth in HIC do access mental health care, they often receive minimal evidence-based care, despite the development of numerous EBTs for youth mental health disorders (Borntrager et al., 2013; Garland et al., 2010; Sawyer et al., 2019).

Dissemination and Implementation Science

In light of these challenges, dissemination and implementation science has focused on increasing access to EBTs across the globe. In the United States and other HIC, researchers have largely focused on providing EBT training and short-term support to existing mental health providers to increase use of EBTs within usual care settings, such as community mental health agencies (Rubin et al., 2016). In contrast, efforts in LMIC have typically focused on developing capacity to deliver EBTs through task-shifting—a process in which "lay counselors" (i.e., non-specialists with little to no prior mental health training) are supervised to deliver EBTs (World Health Organization, 2008). Evidence suggests that task-shifting is feasible and effective, with systematic reviews documenting moderate effects on clinical outcomes among children living in LMIC (Galvin & Byansi, 2020; Jordans et al., 2016; Klasen & Crombag, 2013; Van Ginneken et al., 2013). Further, research indicates that task-shifting EBTs is acceptable to both clients and providers in LMIC (Dorsey et al., 2019; Mendenhall et al., 2014; Murray, Skavenski, et al., 2014; Shahmalak et al., 2019)—meaning they find the interventions to be agreeable or satisfactory (Proctor et al., 2011b).

Despite the development of strategies to improve access to EBTs in both HIC and LMIC, efforts to support EBT implementation have seen mixed success (Beidas et al., 2019; Murray, Tol, et al., 2014). For example, Beidas and colleagues (2019) describe a systems-driven EBT initiative in Philadelphia's public behavioral health system that includes a "centralized infrastructure" for EBT implementation. Their infrastructure, termed the Evidence-based

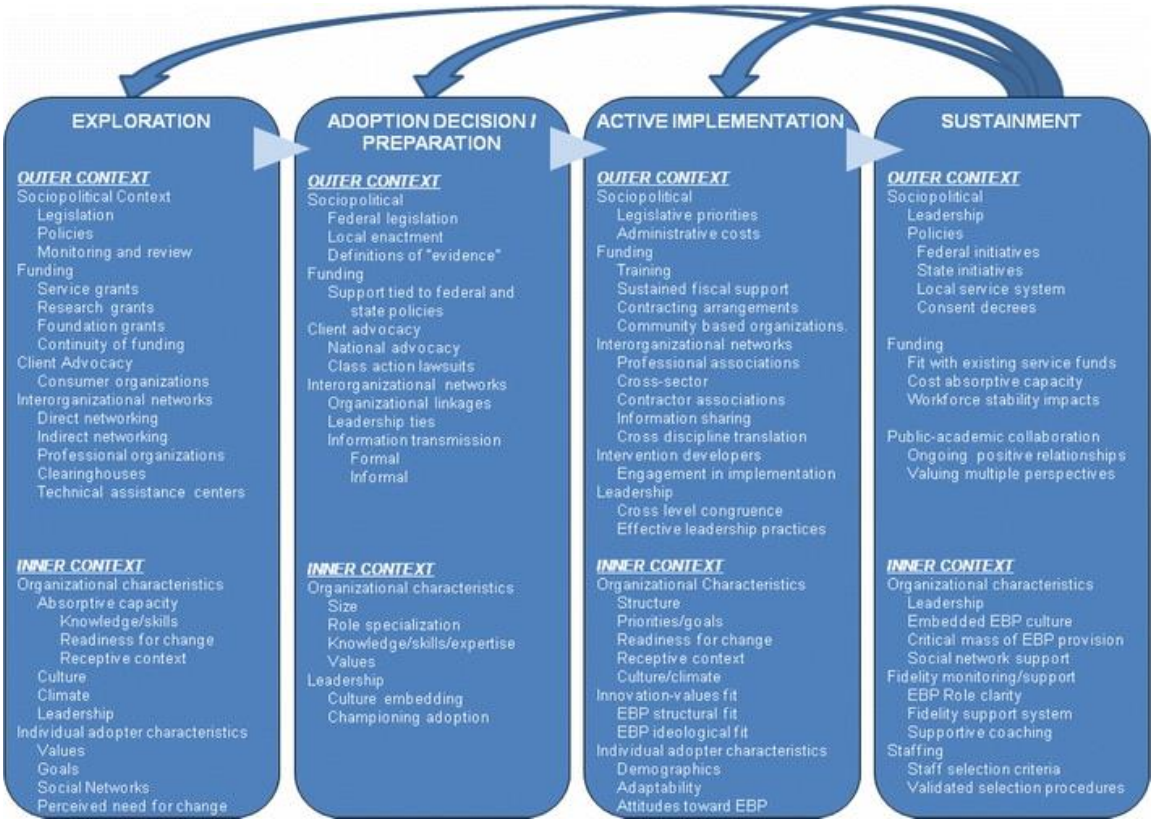
Practice and Innovation Center (EPIC), provides training and technical assistance to organizations around EBT implementation. The EPIC initiative also aligned policy, fiscal, and operational approaches to better support EBT delivery (Beidas et al., 2019). Despite this, they found only a slight (6%) increase in the use of EBT techniques over 5 years of implementation efforts. In LMIC, EBT uptake and implementation by nongovernmental organizations, community-based organizations, and governments has been slow, even with growing policy support through initiatives such as the World Health Organization (WHO) mental health gap action programme (mhGAP; World Health Organization, 2019). The mhGAP provides policymakers and other relevant stakeholders with activities and guidelines to scale up EBTs for mental health disorders. This includes training and operations manuals. In both settings, slow EBT uptake and implementation has been attributed to a multitude of implementation challenges that arise when delivering EBTs in complex, real-world settings, such as challenges with funding or lack of agency and provider buy-in.

Implementation frameworks emphasize that challenges to EBT implementation may arise at multiple levels across multiple phases of implementation (Aarons, Hurlburt, et al., 2011; Proctor et al., 2011a). One popular implementation framework, the Exploration, Preparation, Implementation, Sustainment (EPIS) framework (Aarons et al., 2011; ***Figure 1***), suggests that barriers to EBT implementation may arise anytime between the Exploration phase (i.e., when exploring mental health interventions to address a clinical need and identifying potential implementation challenges) and Sustainment (i.e., continued utilization of the EBT following training and initial implementation). The EPIS framework also calls attention to potential challenges during each of these phases on several levels, including the individual (e.g., providers and client), the organization (e.g., organizational culture, climate, leadership, and processes), and

the policy context (e.g., funding and governments). The EPIS framework, along with many other implementation frameworks, highlights the complexity of the implementation process and the need to attend to multiple factors to ensure successful implementation and sustainment. Given the complexity of these processes, specific implementation outcomes have also been proposed to conceptualize and evaluate the many factors that affect implementation (Proctor et al., 2011a). These outcomes are distinct from clinical outcomes (e.g., changes in symptoms) and sustainability (E. Proctor et al., 2011a). Definitions of these outcomes, and guidelines for reporting (Proctor et al., 2013) are provided in ***Table 2***.

Figure 1

EPIS model of implementation phases and factors impacting implementation. Reproduced from Aarons et al., 2011.



Stakeholder Engagement

Given the complex and dynamic process of implementation, a number of conceptual models of implementation also highlight the importance of stakeholder engagement to ensure the relevance and "fit" of an intervention in a given context (e.g., Aarons et al., 2011; Mendel et al., 2008). We define stakeholder engagement with the Center for Disease Control and Prevention's definition: "the process of working collaboratively with and through groups of people affiliated by geographic proximity, special interest, or similar situations to address issues affecting the well-being of those people" (Centers for Disease Control and Prevention, 1997, p. 9). In the context of children's mental health EBTs, stakeholder engagement may include working collaboratively with children, parents, or providers to address or understand barriers to EBT implementation. Stakeholders themselves can be broadly defined but may include patients or clients receiving an EBT, caregivers and community members, providers delivering an EBT, agency administrators, payers, and policymakers. Stakeholders may be engaged in a variety of ways during the EBT implementation process and have different levels of involvement and power in the implementation process. The varying methods of engagement and power shared in the implementation process may have implications for successful EBT implementation. The International Association for Public Participation characterizes stakeholders' varying levels of engagement and power along a continuum from Inform (i.e., researchers are informing stakeholders of activities) to Empower (i.e., stakeholders are empowered with final decision-making power). This framework is presented in ***Figure 2*** (International Association for Public Participation, 2018), along with examples of how the framework may be applied to children's mental health EBT implementation.

Figure 2

Spectrum of Stakeholder Engagement in EBT Implementation; Adapted from the International Association for Public Participation's Spectrum of Public Participation to include insights for EBT implementation.

Increasing impact on EBT implementation

	INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
Public Participation Goal	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision-making in the hands of the public.
Promise to the public	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision. We will seek your feedback on drafts and proposals.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will work together with you to formulate solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.
Insights for EBT Implementation	Informing clients, providers, or other stakeholders of EBT implementation project through fact sheets, web sites, open houses. *We did not consider this to be stakeholder engagement for this review as stakeholders did not provide feedback.*	Consulting with stakeholders on the EBT through things semi-structured interviews, focus groups, surveys, or other mechanisms where stakeholders share their insights.	Consulting with stakeholders on an on-going basis throughout the EBT implementation process. While stakeholder insights are considered, decision-making power still lies with EBT researchers.	Consulting with stakeholders on an on-going basis throughout the EBT implementation process with interactive and iterative processes that emphasize the bi-directional nature of EBT implementation and research. Final decision-making on the treatment or its implementation still lies with the researcher, but there is much greater input from stakeholders.	Engaging stakeholders in interactive or iterative processes where they develop their own implementation plans or select their own interventions. The final decision-making power lies with stakeholders, and researchers are there to support stakeholders' decisions.

On the more collaboration and empowerment-focused end of engagement, research suggests that deeply involving stakeholders in mental health treatment research may increase the impact of research projects (Khodyakov et al., 2011). In the United States, Community-Based Participatory Research has become a popular stakeholder-engaged research method that aims to empower community stakeholders as co-investigators at each step of the research process. Studies on Community-Based Participatory Research have noted the impact of stakeholder-engaged research on facilitating the initial implementation and sustained use of evidence-based health interventions in community settings in the United States (Lindamer et al., 2009; Stacciarini et al., 2011; Wallerstein & Duran, 2010). Though formal Community-Based

Participatory Research methods are less common in global settings, studies in LMIC have demonstrated that engaging stakeholders can increase relevance and "fit" of HIC-developed EBTs. Stakeholder engagement in these contexts has typically involved adapting EBTs for cultural acceptability (e.g., Murray et al., 2013; Sensoy Bahar et al., 2020). Given their lived experience, stakeholders often have critical context- and cultural-specific knowledge that is not represented on the research team. This knowledge is essential to adapting EBT content and implementation to ensure acceptability and successful implementation (Murray et al., 2013; Sensoy Bahar et al., 2020).

Despite the attention toward stakeholder engagement and community-based models to increase EBT implementation, little is known about the full extent of stakeholder engagement in children's mental health EBT implementation projects globally, including *what* stakeholders are engaged, *how* they are engaged, *when* they are engaged, *where* they are engaged (i.e., location of projects), *why* they are engaged, and the reported *impacts* of engaging stakeholders. In a recent review, Brookman-Frazee and colleagues (2016) characterized the use of "research-community partnerships" in evidence-based practice implementation projects targeting mental health or developmental problems in youth (ages 0–22 years). They defined research-community partnerships as "formal collaborative relationships between researchers and community stakeholders." Their results indicated that even "formal collaborative relationships" may vary with the extent to which they actively *collaborate* with and *empower* community stakeholders, per the International Association for Public Participation framework. Their results were concentrated in the United States, where they found that researchers were most often driving the formation of research-community partnerships. These partnerships typically consisted of agency administrators, providers, and caregivers. Stakeholders were typically more engaged in

implementation and recruitment than other research activities (i.e., manuscript writing and data analysis). The partnerships were, however, perceived to increase the relevance and "fit" of children's mental health interventions and research within the community (L Brookman-Frazee et al., 2016). Though Brookman-Frazee and colleagues (2016) present a comprehensive review of research-community partnerships, more research is needed to characterize the engagement efforts beyond formalized partnerships. While some projects may have defined partnerships (e.g., formal agreements about which roles stakeholders play in the research process), others may engage stakeholders in less-defined ways, such as focus groups, interviews, or brainstorming meetings. A deeper understanding of the varieties of ways in which stakeholders are engaged in children's mental health EBT implementation projects is needed to better characterize stakeholder engagement practices and identify opportunities to increase engagement and likelihood of implementation success. Further, as EBT implementation efforts become more widespread in LMIC, more information is needed on stakeholder engagement practices in these contexts. Characterizing stakeholder engagement in aggregate, as well as separating LMIC and HIC, may identify opportunities to improve engagement practices in either setting.

This scoping review aimed to broadly characterize stakeholder engagement methods used during children's mental health EBT implementation projects and recommend future directions for this field. We sought to examine key variables relevant to stakeholder engagement, including types of stakeholders engaged, the EPIS phase in which stakeholders are typically engaged, the settings in which stakeholders have been engaged, and the method through which stakeholders are typically engaged in EBP implementation projects. We also disaggregate results to illustrate patterns in stakeholder engagement in both HIC and LMIC.

METHODS

Given the broad and heterogenous nature of stakeholder engagement efforts within child mental health EBT implementation projects, as well as the nascent state of the literature that characterizes these efforts, we took a less restrictive approach than a traditional systematic review and conducted a *scoping* review of stakeholder engagement practices (Arksey & O'Malley, 2005). Scoping reviews are indicated over systematic reviews when the existing literature is more varied or emerging (Anderson et al., 2008). They are aimed at systematically surveying and synthesizing literature to define relevant concepts, outlining existing types of evidence, and determining any gaps in research and potential future directions (Colquhoun et al., 2014). Scoping reviews do not aim to evaluate the quality of studies or draw conclusions about the relative effectiveness of interventions. Thus, we did not evaluate the quality of included studies and do not report on relative effectiveness of various stakeholder methods. Rather, our approach was purely descriptive in characterizing the existing literature and any potential gaps in the application or reporting of stakeholder engagement methods. We follow the preferred reporting items for systematic reviews and meta-analyses extension for scoping reviews (PRISMA-ScR) and all procedures were pre-registered on the Open Science Framework (OSF; Triplett, 2020). The PRIMSA-ScR flow diagram is presented later in ***Figure 3***, and the checklist is included in Appendix 1.

Search Strategy

We developed a comprehensive search strategy in consultation with a research librarian. To ensure completeness, we reviewed title, abstract, and keywords from pre-selected articles to generate a list of search terms. We also reviewed search strategies from similar reviews on EBT implementation projects and stakeholder engagement in different disciplines. Search terms were categorized into the following groups: 1) stakeholders, 2) mental health therapy, 3)

implementation, and 4) evidence-based practice. All searches were limited to English-language journal articles (not conference abstracts, book chapters, or dissertations). The final search strategy is included in Appendix 2. One author (NST) completed the final search in October 2020. We searched the following seven databases: Medline, PsycInfo, Embase, ERIC, CINAHL Complete, Scopus, Web of Science Core Collection. We examined the reference lists of studies identified using the search terms above to identify additional articles and check the completeness of our search.

Study inclusion and exclusion criteria

To be selected for review, a study had to describe some form of stakeholder engagement undertaken for informing the implementation of a child mental health-focused EBT. We excluded broad "evidence-based practice" implementation projects that did not aim to implement specific treatments as well as EBTs that addressed specific behaviors that may not occur within the context of diagnosable mental health conditions (e.g., problematic sexual behavior). In line with our goals to characterize the practice of stakeholder engagement, we used a broad definition of engagement. It was defined as any attempt to gather perspectives on an intervention or its implementation from people who may interface with the intervention, including (but not limited to): providers, policymakers, community members, caregivers, payors, and clients. Given we sought to characterize attempts to gather perspectives from stakeholders, we excluded studies that *informed* stakeholders of children's mental health EBT implementation projects with no attempt to gather information or hear their perspectives (i.e., the lowest level of engagement on the International Association for Public Participation framework). Review articles without original data, non-empirical studies, and study protocols were excluded from our review. No other inclusion or exclusion criteria were imposed.

Study selection

All identified records were imported into a systematic review management tool (Covidence; Veritas Health Innovation, n.d.) for abstract and full text screening. Six reviewers (NST, GSW, JN, RA, CJ, FS) independently assessed study titles and abstracts to determine if they met inclusion criteria. Each study was screened by two reviewers and studies were included for full text review if both reviewers agreed on inclusion. All reviewers met for twice-monthly consensus meetings to refine inclusion criteria and discuss pre-selected discrepancies. Discrepancies were selected by the first author (NST) if they presented opportunities for inclusion criteria refinement and/or reviewer training. Approximately 20% of all discrepancies were resolved in group consensus meetings. Discrepant assessments that were not resolved in consensus meetings were resolved by a third reviewer, who was a graduate student and masked to the votes of the other two reviewers (NST, RA, GSW). After title and abstract screening was complete, a team of eight reviewers (NST, GSW, RA, CJ, JN, FS, JCM, KS, SS) independently assessed the full text of selected articles to determine if they met inclusion criteria. Each article was screened by two reviewers, and discrepancies in full text review were resolved through consensus discussion. When necessary, a third reviewer was consulted to reach consensus.

Data extraction

A draft extraction table was developed prior to review registration and piloted with a small sample of articles before official coding began. The extraction table aimed to capture all study characteristics and key elements relevant to stakeholder engagement. Official study extraction was completed on Covidence. Pairs of reviewers extracted data from each study and discussed discrepancies to consensus. Each pair consisted of at least one graduate student with experience conducting systematic reviews. When necessary, a third coder was consulted. The

final list of abstracted data is presented in ***Table 1***. The items capture study characteristics (i.e., EBT, country, setting), stakeholders engaged, engagement methods (including depth of engagement), EPIS phase of engagement, rationale for engagement, any reported effects of engagement on implementation outcomes, and quality of reporting.

Table 1

Data Extraction

Information extracted	Description
Author	List of authors
Year	Publication year
Title	Study title
Project Group	Larger project from which manuscript data originated (if applicable)
EBT	EBT being implemented
Client Age	Age of clients treated by the EBT
Country	Country where the study was conducted
World Bank Country Income Classification	World Bank Classifications of Gross National Income per Capita of the Country where the study was conducted
Setting	Physical location where the study was conducted (e.g., mental health agency)
Stakeholder Engagement Methods	Description of methods used to engage stakeholders
Method Type	Classification of methods used to engage stakeholders (qualitative, quantitative, mixed methods)
Stakeholder Engagement Rationale	Description of rationale provided for why projects engaged stakeholders
Stakeholders Engaged	Number and type of stakeholders engaged
Depth of Engagement	Depth of stakeholder engagement, as classified by the International Association for Public Participation's Spectrum of Public Participation
Phase of Implementation	Stage of the EBP implementation (exploration, preparation, implementation, sustainment, multiple, no active implementation, or not reported)
Stakeholder Engagement Reporting	Presence or absence of Proctor and colleagues' (2013) specifications for specifying and reporting on implementation strategies
Benefits on Implementation Outcomes	Reported benefits of stakeholder engagement on Proctor and colleagues' (2011) implementation outcomes.

EBT: evidence-based treatment, *EPIS:* exploration, preparation, implementation, sustainment framework

We drew from established frameworks to inform data extraction. Stakeholders were categorized into 8 categories: patients/clients, providers, payers, policymakers, community members, caregivers, researchers, and other. Engagement methods were categorized as: quantitative (i.e., surveys), qualitative (e.g., semi-structured interviews or focus groups), mixed-method (i.e., including both quantitative and qualitative methods), or other (e.g., collaborative workshops without formal qualitative data collection or analysis; advisory boards). We adapted the International Association for Public Participation's spectrum of public engagement (International Association for Public Participation, 2018; ***Figure 2***) to characterize depth of stakeholder engagement in selected studies. Reviewers selected the corresponding level of engagement during independent extraction and came to consensus on the final reported result. Reviewers also selected the corresponding EPIS phase(s) in which stakeholders were engaged.

Implementation outcomes were defined with Proctor and colleagues taxonomy (2011a), which includes acceptability, adoption, appropriateness, cost, feasibility, fidelity, penetration and sustainability (see ***Table 2*** for definitions). We considered stakeholder engagement as a strategy intended to facilitate the implementation of an EBT, and as such assessed the quality of reporting on stakeholder engagement with guidance from Proctor and colleagues (2013) recommendations on specifying and reporting implementation strategies. We coded the presence or absence of the following details: actor, action, target, temporality, dose, implementation outcome(s) affected, and justification (see ***Table 2*** for definitions). Each factor in this checklist was counted as present if any aspect of the factor was mentioned, regardless of quality or level of detail. We considered "implementation outcomes(s) affected" as present when studies appropriately identified an

implementation outcome, even if they did not measure that outcome or isolate the effect of stakeholder engagement on that outcome. We counted "justification" as present when studies provided pragmatic justifications for their choice of implementation strategy, even if additional empirical or theoretical justifications were not provided. Again, given the heterogeneity in stakeholder engagement in children's mental health EBT implementation projects, these changes were made to be more inclusive and best capture the current state of reporting stakeholder engagement strategies. Finally, we also extracted "rationales" for engaging stakeholders, defined as any mention of why researchers decided to engage with stakeholders at any point in the research process.

Table 2

Proctor and Colleague's Outcomes for Implementation Research (2011) & Recommendations for Specifying and Reporting (2013)

Implementation Outcome	Definition
Acceptability	"The perception among implementation stakeholders that a given treatment, service, practice, or innovation is agreeable, palatable, or satisfactory" (Proctor et al., 2011, p. 67)
Adoption	"The intention, initial decision, or action to try or employ an innovation or evidence-based practice" (Proctor et al., 2011, p. 69)
Appropriateness	"The perceived fit, relevance, or compatibility of the innovation or evidence-based practice for a given practice setting, provider, or consumer; and/or perceived fit of the innovation to address a particular issue or problem" (Proctor et al., 2011, p. 69)
Costs	"The cost impact of an implementation effort" (Proctor et al., 2011, p. 69)
Feasibility	"The degree to which an intervention was implemented as it was prescribed in the original protocol or as it was intended by the program developers" (Proctor et al., 2011, p. 69)
Fidelity	"The extent to which a new treatment, or an innovation, can be successfully used or carried out within a given agency or setting" (Proctor et al., 2011, p. 69)
Penetration	"The integration of a practice within a service setting and its subsystems" (Proctor et al., 2011, p. 70)

Sustainability	"The integration of a practice within a service setting and its subsystems" (Proctor et al., 2011, p. 70)

Reporting Specification	Requirements
Actor	"Identify who enacts the strategy (e.g., administrators, payers, providers, patients/consumers, advocates, etc.)" (Proctor et al., 2013, p. 4).
Action	"Use active verb statements to specify the specific actions, steps, or processes that need to be enacted" (Proctor et al., 2013, p. 4).
Action Target	"Specify targets according to conceptual models of implementation" (Proctor et al., 2013, p. 4).
Temporality	"Specify when the strategy is used" (Proctor et al., 2013, p. 4).
Dose	"Specify dosage of implementation strategy" (Proctor et al., 2013, p. 4).
Implementation Outcome Affected	"Identify and measure the implementation outcome(s) likely to be affected by each strategy" (Proctor et al., 2013, p. 4).
Justification	"Provide empirical, theoretical, or pragmatic justification for the choice of implementation strategies" (Proctor et al., 2013, p. 4).

Data synthesis

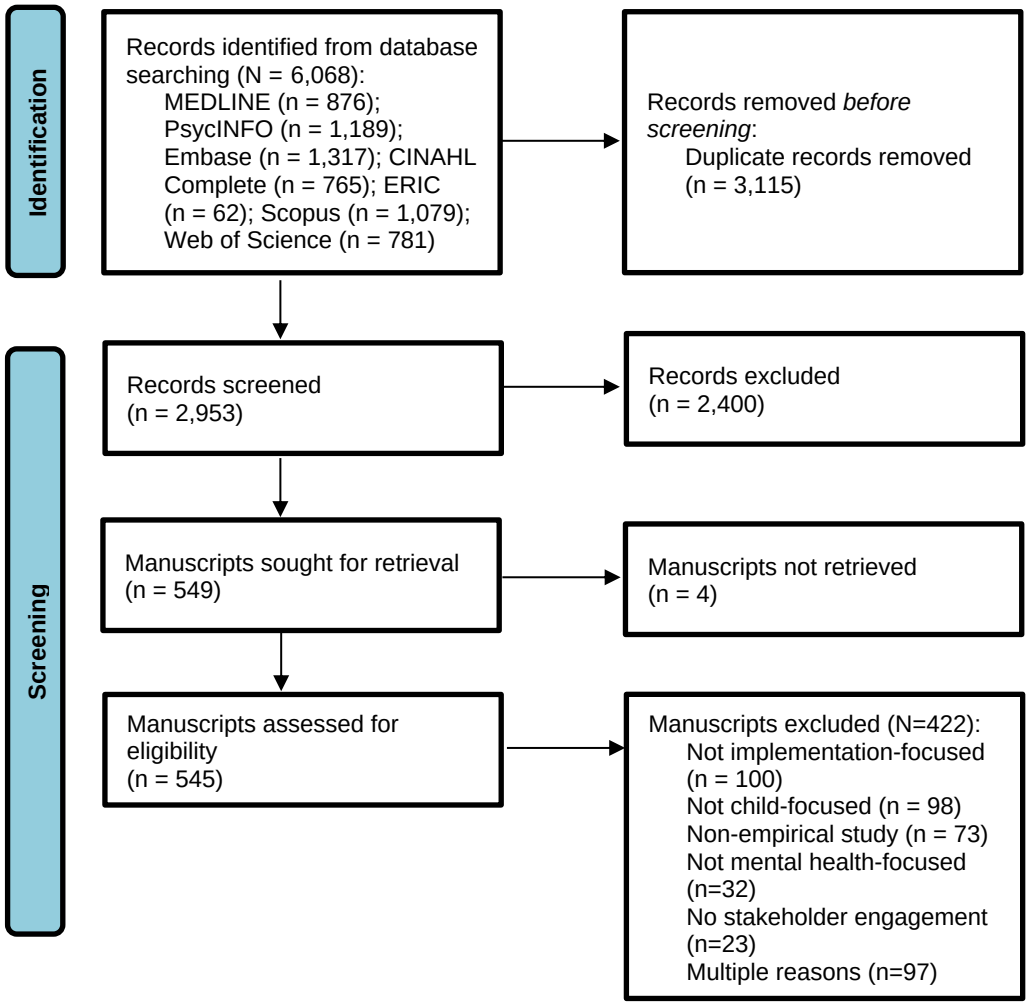
Synthesis involved quantitative analysis (e.g., descriptive statistics) of study characteristics and qualitative analysis of stakeholder engagement rationales. When appropriate, we calculated frequencies and percentages for categorical variables (e.g., study characteristics, engagement methods) to broadly characterize stakeholder engagement efforts, including *what* stakeholders are engaged, *how* they are engaged, *when* they are engaged, *where* they are engaged (i.e., location of projects), *why* they are engaged, and the reported *impacts* of engaging stakeholders. We used an inductive approach to qualitatively code rationale of stakeholder engagement. Two authors (NST, GSW) independently reviewed all reported rationales for stakeholder engagement and generated themes that emerged from the reported rationales. We present frequencies of themes across reported rationales. Across all data elements, we split results by low-to-middle-income countries and high-income countries.

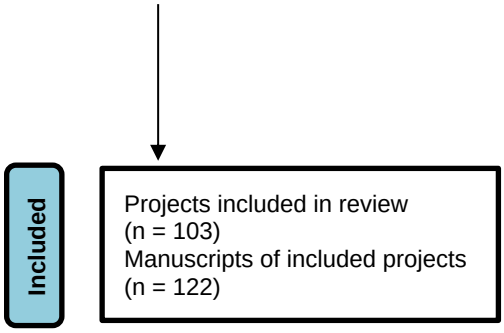
RESULTS

The search yielded a total of 6,068 articles. After excluding duplicates, 2,953 titles and abstracts were reviewed for inclusion. Among those, 545 articles progressed to full-text review and 122 articles met criteria for inclusion (***Figure 3***). Articles were primarily excluded because they did not report on implementation processes or outcomes (*n* = 100), or they were not child-focused EBTs (*n* = 98). We identified a total of 103 unique child mental health EBT implementation projects across all 122 included articles. To capture the full range of stakeholder engagement in an implementation project, which may be segmented into multiple manuscripts, data from the same projects were clustered together. Each project is represented only once in all results.

Figure 3

PRISMA Flow Diagram





Settings and Stakeholders

Study characteristics and information about delivery setting are summarized in ***Table 3***. Projects were conducted across 22 countries. Countries varied with regard to their gross national income, as classified by the World Bank Atlas method (World Bank, 2015). A majority of projects were conducted in high income economy countries (n = 86; 83.5%), with smaller numbers conducted in upper-middle-income economies (n = 4; 3.9%), lower-middle-income economies (n = 10; 9.7%), and low-income economies (n = 3; 2.9%). Across all countries, EBTs were delivered in a variety of settings. Interventions were most frequently delivered in community mental health settings (n = 44; 42.7%), followed by schools (n= 28; 27.2%). There were notable differences in settings between projects conducted in HIC (n = 86) and LMIC (n = 17). The majority of projects in HIC were in public mental health settings (n = 44; 51.2%), followed by schools (n = 21; 24.4%) and child welfare centers (n = 15; 17.4%). By contrast, when examining projects that occurred in LMIC (n = 17), EBTs were most often delivered in school settings (n = 6; 35.3%) or other community or non-profit settings (n = 11; 64.7%).

Table 3

Study Characteristics and Delivery Setting

Country/Territory in which the project was conducted	***N* (%)**
United States	74 (70.9%)
United Kingdom	2 (1.9%)
Canada	3 (2.9%)

Australia			2 (1.9%)
Romania			1 (.97%)
Puerto Rico			1 (.97%)
Israel			1 (.97%)
Ireland			1 (.97%)
Singapore			1 (.97%)
Uganda			1 (.97%)
Rwanda			1 (.97%)
Burundi			1 (.97%)
Zambia			2 (1.9%)
Egypt			1 (.97%)
Kenya			3 (2.9%)
Nepal			1 (.97%)
El Salvador			1 (.97%)
India			2 (1.9%)
Tanzania			2 (1.9%)
South Africa			1 (.97%)
Brazil			1 (.97%)
Lebanon			2 (1.9%)
World Bank income classification			
High			86 (83.5%)
Upper-Middle			4 (3.9%)
Lower-Middle			10 (9.7%)
Low			3 (2.9%)
	Low-to-Middle Income Countries (n = 17)	**High Income Countries (n = 86)**	**Overall (N=103)**
Setting			
Community Mental Health	—	44 (51.2%)	44 (42.7%)
Schools	6 (35.3%)	21 (24.4%)	27 (26.2%)
Hospitals	—	6 (6.9%)	6 (5.8%)
Juvenile Justice	—	3 (3.5%)	3 (2.9%)
Child Welfare Centers	—	15 (17.4%)	15 (14.6%)
Substance Use	—	1 (1.2%)	1 (.97%)
Other	9 (52.9%)	6 (6.9%)	15 (14.6%)
Not Reported	2 (1.9%)	5 (5.8%)	7 (6.8%)

Table 4 includes descriptive statistics of which stakeholders were engaged and during

which EPIS phase they were engaged. Across all countries, projects most frequently engaged with providers (n = 85; 82.5%), followed by agency administrators or other staff (n = 53; 51.5%) and children's caregivers (n = 41; 39.8%). There were some differences in stakeholders engaged between projects conducted in HIC and LMIC. Similar to overall patterns, projects in HIC most frequently engaged with providers (n = 69; 80.2%), followed by agency administrators or other staff (n = 49; 56.9%) and children's caregivers (n = 33; 38.4%). In contrast, projects conducted in LMIC (n = 17) nearly always engaged providers (n = 16; 94.1%) and frequently engaged community members (n = 9; 52.9%) and caregivers (n = 8; 47.1%). Projects in LMIC also more frequently engaged with clients (n = 6; 35.3%) than projects in HIC (n = 16; 18.6%).

Across all projects, stakeholders were most frequently engaged during the active implementation EPIS phase (n = 79; 76.7%), followed by the preparation (n = 47; 45.6%) and exploration phases (n = 27; 26.2%). Again, there were some differences in when stakeholders were engaged by income classification. Projects in HIC (n = 86) followed a similar pattern to our overall results, with engagement most frequently occurring in the active implementation (n = 66; 76.7%) and preparation EPIS phases (n = 41; 47.7%). Again, contrasting projects conducted in LMIC (n = 17), stakeholders were similarly most often engaged during the active implementation EPIS phase (n = 13; 76.5%). However, projects in LMIC more frequently engaged stakeholders in the exploration EPIS phase (n = 8; 47.1%) than projects in HIC (n = 19; 22.1%).

Table 4

Stakeholders Engaged and EPIS Phase of Engagement

	Low-to-Middle Income Countries (n = 17)	**High Income Countries (n = 86)**	**Overall (N = 103)**
Stakeholders Engaged			

Patients/Clients	6 (35.3%)	16 (18.6%)	22 (21.4%)
Providers	16 (94.1%)	69 (80.2%)	85 (82.5%)
Private Payers	—	1 (1.2%)	1 (.97%)
Policymakers	4 (23.5%)	14 (16.3%)	18 (17.5%)
Community Members	9 (52.9%)	19 (22.1%)	28 (27.2%)
Caregivers	8 (47.1%)	33 (38.4%)	41 (39.8%)
Researchers	4 (23.5%)	20 (23.3%)	24 (23.3%)
Agency Administrators	4 (23.5%)	49 (56.9%)	53 (51.5%)
EPIS Phase			
Exploration	8 (47.1%)	19 (22.1%)	27 (26.2%)
Preparation	6 (35.3%)	41 (47.7%)	47 (45.6%)
Implementation	13 (76.5%)	66 (76.7%)	79 (76.7%)
Sustainment	1 (5.9%)	11 (12.8%)	12 (11.7%)

EPIS exploration, preparation, implementation, sustainment framework

Engagement Methods and Depth

Stakeholder engagement rationales, methods, and depth of engagement are described in ***Table 5***. One hundred and seventeen manuscripts described a rationale for engaging stakeholders, representing ***95*** projects. Rationales for engaging stakeholders generally clustered under three themes: building partnerships; informing subsequent implementation; and explaining implementation processes following implementation. Twenty-eight projects reported that a primary rationale for their engagement with stakeholders was to engage with communities and build partnerships to support EBT implementation. These efforts were often in the context of implementation planning and EBT adaptation; however, there were some studies that discussed desires to build partnerships generally and not within the context of implementation or adaptation. For example, (Ngo et al., 2011) discussed their rationale:

> "Community-based participatory processes have been identified as a promising approach for disseminating EBPs [Evidence-Based Practices] for mental health problems in low-income ethnic minority communities, and we believed this approach would be appropriate in a post-disaster setting. Central to this approach is the use of community

engagement strategies to build equal, collaborative relationships among researchers and community members so that expertise from the field may guide the research process and increase the likelihood of producing sustainable programs" (p. 2).

Thirty-nine manuscripts reported that a primary rationale for engaging stakeholders was to inform the subsequent implementation of EBTs, such as through implementation planning or EBT adaptation. Finally, 54 manuscripts reported a primary rationale of engaging stakeholders to explain barriers and facilitators that were encountered during the implementation of EBTs. Rationales were similar across projects conducted in HIC and LMIC; however, projects conducted in LMIC more frequently reported a rationale of engaging stakeholders to inform subsequent implementation (n = 10; 58.8%) than projects conducted in HIC (n = 29; 33.7%).

Stakeholders were engaged in a variety of different ways, including through mixed qualitative and quantitative methods (n = 35; 34.0%), qualitative interviews or focus groups (n = 34; 33.0%), and questionnaires and surveys (n = 21; 20.4%). Many projects also engaged stakeholders without formal data collection (n = 24; 23.3%), through processes such as community advisory boards, collaborative planning meetings, and formal community-based participatory research methods. Methods of engagement were similar across projects conducted in HIC and LMIC, with the exception of the use of quantitative methods to engage stakeholders. Notably, though mixed method (n = 6; 35.3%) and qualitative interviews or focus groups (n = 7; 41.2%) were common in projects conducted in LMIC but exclusive quantitative methods (i.e., questionnaires and surveys) were not (n = 1; 5.9%). This is contrasted to nearly one quarter (23.3%) of projects in HIC that relied exclusively on quantitative methods to engage stakeholders.

Depth of engagement also varied by project. Overall, projects most often *consulted* with

stakeholders (n = 43; 41.7%), meaning they obtained feedback from stakeholders through interviews or surveys on one occasion with no follow-up or shared-decision making. Fewer numbers of projects *involved* (n = 23; 22.3%) or *collaborated* (n = 23; 22.3%) with stakeholders. *Involvement* required multiple solicitations of feedback through interviews, focus groups, or surveys but again granted limited decision-making power to stakeholders. *Collaboration* indicated a greater amount of power was given to stakeholders and their feedback, such as by allowing stakeholders to participate in shared decision-making meetings to adapt EBTs or implementation processes. The fewest number of studies *empowered* stakeholders (n = 14; 13.6), meaning they placed the final decision-making power in the hands of the stakeholder through processes like iterative implementation plan development or EBT selection. Overall, depth of engagement was similar in projects conducted in LMIC and HIC; however, there was a trend toward greater depth of engagement with stakeholders in LMIC. Like above, projects in LMIC most frequently *consulted* (n = 5; 29.4%) and *collaborated* (n = 5; 29.4%) with stakeholders. Fewer numbers of projects *involved* stakeholders (n = 4; 23.5%), and again, the fewest number of projects *empowered* stakeholders (n = 3; 17.6). Notably, though, projects conducted in LMIC less frequently consulted with stakeholders (29.4% v. 44.2%) and more frequently empowered stakeholders (17.6% v 12.8) than projects in HIC.

Table 5

Rationale, Methods, and Depth of Stakeholder Engagement

	Low-to-Middle Income Countries (n = 17)	**High Income Countries (n = 86)**	**Overall (N = 103)**
Rationale			
Build Partnership	4 (23.5%)	24 (27.9%)	28 (27.2%)
Inform	10 (58.8%)	29 (33.7%)	39 (37.9%)
Explain	7 (41.2%)	47 (54.7%)	54 (52.4%)
Methods			

Quantitative	1 (5.9%)	20 (23.3%)	21 (20.4%)
Qualitative	7 (41.2%)	27 (31.4%)	34 (33.0%)
Mixed-Method	6 (35.3%)	29 (33.7%)	35 (33.9%)
Other	3 (17.6%)	21 (24.4%)	24 (23.3%)
Depth of engagement			
Consult	5 (29.4)	38 (44.2%)	43 (41.7%)
Involve	4 (23.5%)	19 (22.1)	23 (22.3%)
Collaborate	5 (29.4%)	18 (20.9%)	23 (22.3%)
Empower	3 (17.6%)	11 (12.8%)	14 (13.6%)

Reporting on Stakeholder Engagement

The reporting of stakeholder engagement, as assessed by Proctor and colleagues' (2013) reporting recommendations, varied significantly across studies in our sample (***Table 6***), with few differences between projects conducted in LMIC and HIC. Overall, *Actors* (i.e., the individuals conducting the engagement efforts) were reported in most projects (n = 84; 81.6%), as were the *actions* taken to engage stakeholders (n = 97; 94.2%). However, the level of detail provided on actions to engage stakeholders varied between studies, with some describing their procedures in depth and others briefly summarizing engagement strategies (e.g., "shared decision-making meetings"). *Targets* (i.e., what was intended to be addressed with stakeholder engagement) were frequently identified within projects (n = 100; 97.1%); however, these were often inferred based on the rationales for projects (i.e., adapting EBT content) but not explicitly stated. *Temporality* (i.e., when stakeholder engagement occurred) was also frequently reported (n = 92; 89.3%), but *dose* (i.e., how long engagement was) was reported less often (n = 64; 62.1%). There was an apparent difference in reporting dose between projects in HIC (66.3%) and those in LMIC (41.2%). Whereas temporality could be inferred from the stage of the project in which engagement occurred (e.g., post-implementation), studies frequently omitted details about how long focus groups, semi-structured interviews, or other engagement methods lasted. *Justification* (i.e., justifying why projects chose to engage stakeholders) was often inferred from studies

rationales for engagement and frequently reported (n = 96; 93.2%). However, studies least frequently reported on the *implementation outcomes affected* or likely to be affected by stakeholder engagement (n = 65; 54.4%). Interestingly, though, studies in LMIC more frequently reported implementation outcomes affected (76.5%) than projects conducted in HIC (50.0%).

Impacts of Stakeholder Engagement

We classified reported impacts of stakeholder engagement on EBT implementation using Proctor and colleagues (2011) taxonomy of implementation outcomes (see ***Table 6*** for results). Given the aims of this review (i.e., to characterize stakeholder engagement methods broadly) and our inclusion criteria, studies were not required to isolate the effects of stakeholder engagement on implementation outcomes or explicitly discuss the effects of stakeholder engagement on EBT implementation. Only 32 studies (31.1%) discussed impacts of stakeholder engagement on EBT implementation. These studies typically reported on implementation outcomes following prior stakeholder engagement methods and highlighted how engagement efforts might have benefitted implementation outcomes. For example, studies frequently engaged stakeholders to adapt EBT content then conducted assessments of the acceptability, feasibility, etc. of the adapted EBT. Projects conducted in LMIC did more frequently report impacts of stakeholder engagement (n = 8; 47.1%) than projects conducted in HIC (n = 24; 27.9%).

Of the 32 studies that discussed impacts of stakeholder engagement, the most reported benefits of stakeholder engagement were on EBT acceptability (n = 16; 50.0%) and feasibility (n = 12; 37.5%). For acceptability, these discussions were typically regarding adaptations made to EBT content. For example, Bahar and colleagues (2020) discuss how they incorporated recommendations from stakeholders to ensure the cultural- and contextual-relevance of a US-developed EBT (4Rs and 2Ss; McKay et al., 2011) to the Ugandan context. Following this

adaptation process, results suggested children and families found the adapted EBT to be highly acceptable. Discussions of the benefits of stakeholder engagement on feasibility were similar; however, adaptations or input from stakeholders was more focused on how the intervention was delivered (types of providers, training methods, and/or intervention delivery setting). For example, Puffer and colleagues (Puffer et al., 2019) discuss how engaging stakeholders to identify potential mechanisms for treatment delivery (i.e., providers and delivery settings) resulted in perceived feasibility of the EBT. Fewer studies discussed benefits of stakeholder engagement on penetration (n = 6; 18.8%), fidelity (n = 5; 15.6%), adoption (n = 5; 15.6%), and appropriateness (n = 3; 9.4%). The fewest number of studies discussed benefits of stakeholder engagement on EBT cost (n = 1; 3.1%) and sustainability (n = 1; 3.1%).

Table 6

Benefits and Quality of Reporting on Stakeholder Engagement

	Low-to-Middle Income Countries (n = 17)	**High Income Countries (n = 86)**	**Overall (N = 103)**
Benefits by Implementation Outcome			
Acceptability	7 (41.2%)	9 (10.5%)	16 (15.5%)
Feasibility	5 (29.4%)	7 (8.1%)	12 (11.7%)
Fidelity	1 (5.9%)	4 (4.7%)	5 (4.9%)
Penetration	—	6 (6.9%)	6 (5.8%)
Adoption	2 (11.8%)	4 (4.7%)	6 (5.8%)
Appropriateness	—	3 (3.5%)	3 (2.9%)
Cost	—	1 (1.2%)	1 (.97%)
Sustainability	—	1 (1.2%)	1 (.97%)
Reporting on Stakeholder Engagement			
Actor	14 (82.4%)	70 (81.4%)	84 (81.6%)
Action	17 (100%)	80 (93.0%)	97 (94.2%)
Target	17 (100%)	83 (96.5%)	100 (97.1%)
Temporality	15 (88.2%)	77 (89.5%)	92 (89.3%)
Dose	7 (41.2%)	57 (66.3%)	64 (62.1%)
Implementation Outcome	13 (76.5%)	43 (50.0%)	56 (54.4%)

Justification	17 (100%)	79 (91.9%)	96 (93.2%)

DISCUSSION

This scoping review aimed to synthesize how stakeholders have been engaged in children's mental health EBT implementation projects. We identified and examined studies from 22 different countries spanning all four World Bank income classifications. Studies used a variety of methods to engage stakeholders at different phases in the implementation process. The majority of projects engaged stakeholders during the active implementation EPIS phase, with fewer projects engaging stakeholders during the exploration and preparation phases, and only one engaging stakeholders during sustainment. Included studies most often engaged stakeholders in the active implementation EPIS phase (i.e., following initial implementation) to explain implementation barriers or facilitators. The depth of stakeholder engagement also highlighted this limited engagement, as most projects only *consulted* with stakeholders (i.e., projects gained input from stakeholders once without sharing decision-making power). The fewest number of projects *empowered* stakeholders by giving them the final decision-making power. Finally, though impacts of stakeholder engagement were only reported in 32 studies (31.1%), across studies at least one study reported a benefit on each implementation outcome.

Given the pervasive nature of the children's mental health treatment gap, we aimed to broadly examine stakeholder engagement efforts. Most included studies were in the United States and other high-income countries. Fewer projects were conducted in low-to-middle income countries, particularly within low-income countries. Although it is notable that more projects engaged stakeholders in lower-middle income countries with the fewest number of projects engaging stakeholders in low-income countries, we aggregated all low-to-middle income countries together following the global mental health gold standard. This aggregation may

conceal important differences in engagement across these different contexts; however, even comparing engagement between LMIC and HIC highlighted important differences in engagement practices between settings, which are discussed in greater depth later in the manuscript.

Our synthesis revealed that children's mental health EBT implementation projects have engaged a broad variety of stakeholders. Across all contexts, providers were the most frequent stakeholder type engaged within the EBT projects (82.5%). A great deal of research has documented provider-level barriers to EBT implementation, including the impact of providers' knowledge of EBTs and negative attitudes toward EBTs (Becker-Haimes et al., 2019; Beidas et al., 2015). As such, engaging providers as stakeholders in EBT implementation may be an important tool to address these negative beliefs and other provider-level barriers to implementation. Our synthesis suggests that some critical groups of stakeholders—policymakers, private payers and policymakers—may be less frequently engaged in the EBT implementation process. Notably, only a small number of projects (n = 18; 17.5%) engaged policymakers or other key decision-makers within mental health systems (e.g., state department of behavioral health officials). Research has similarly documented the myriad of challenges that can arise at the policy-level that impede the successful implementation EBTs (Aarons, Wells, et al., 2011; Green & Aarons, 2011; Isett et al., 2007), and there have been growing efforts to engage with policymakers to generate evidence-informed policy that supports EBT implementation and sustained use (Brennan et al., 2017). Moving forward, children's mental health EBT implementation projects would likely benefit from engaging policymakers more often to ensure relevant policy and fiscal supports are in place to support EBT implementation. Given what we know about the challenges to EBT implementation that arise at the policy-level, engaging

policymakers more widely may be an essential strategy to preempt these challenges.

Our synthesis also suggested a major gap in engaging with private payers, such as insurance companies or foundations that provide financial support for EBT implementation. Importantly, there is also some conceptual overlap between policymakers and private payers, with the former driving public funding priorities and policies. Further, most included projects were conducted in public mental health settings in the United States, which would fall under the jurisdiction of policymakers. However, as noted above, policymakers were also engaged with relatively low frequency. Both policymakers and private players play distinct roles in supporting children's mental health EBT implementation. Engaging policymakers and private payers throughout children's mental health EBT implementation projects may address the myriad of financial challenges that implementing organizations face when implementing and sustaining EBTs (Beidas et al., 2016). By engaging these stakeholders throughout the EBT implementation process, researchers, policymakers, and payers can collaborate to identify fiscal concerns and propose solutions that are acceptable to all relevant stakeholders. These efforts may be essential in preempting and addressing fiscal barriers that limit long-term sustainment of EBTs.

Relatedly, relatively few projects engaged clients in the EBT implementation process. This may in part be explained by greater engagement of caregivers, who may report on client-level factors for younger clients. However, especially considering EBT implementation for older youth, engaging clients themselves may be a key tool to improve the implementation of EBTs. Despite challenges associated with engaging youth clients in mental health research (Faithfull et al., 2019), youth involvement is crucial to ensure that projects are relevant and responsive to youth needs (McCartan et al., 2012). A growing body of research has focused on engaging clients in improving or redesigning mental health service delivery with a recent systematic

review noting the potential benefits of engaging clients to enhance quality of care (Bombard et al., 2018). Moving forward, EBT implementation projects should continue to broaden their engagement efforts beyond providers, with a focus on including payers and clients. Such efforts may improve both the success of EBT implementation and the likelihood of sustainment through supporting policy and funding.

Similar to the variation in types of stakeholders engaged in research, distinct patterns emerged in both the phase of engagement and depth and rationale of engagement. Included studies most often engaged stakeholders in the active implementation EPIS phase (76.7%). These findings parallel our synthesis of depth of engagement, where the plurality of projects only *consulted* with stakeholders (41.7%), meaning they were engaged only once with little-to-no decision-making power, which could be explained by engaging stakeholders once during implementation. Stakeholders were commonly engaged during the active implementation phase, following initial EBT delivery, to consult on barriers and facilitators. While their feedback at this point may have been used to tailor subsequent implementation, it was typically not clear how feedback was used to inform subsequent implementation or what decision-making power was shared with stakeholders following active implementation consultation. Notably, though, there were some key differences in depth of engagement and rationale between projects in LMIC and HIC. Projects in LMIC more frequently engaged with stakeholders earlier in the implementation process, including to select and adapt EBTs. Given that most EBTs were developed and have been primarily tested in HIC, this likely reflects the need to adapt EBTs and engage stakeholders for crucial context- and cultural-specific knowledge. However, HIC-based projects may similarly benefit from engaging stakeholders earlier in the implementation process. They are key differences in the settings in which EBTs are developed and the settings into which our included

studies attempted to implement them. Engaging stakeholders in HIC earlier in the EBT implementation process (e.g., when deciding which EBTs to implement or preparing to begin implementation) may similarly provide crucial knowledge that preempts some barriers to EBT implementation and increases the likelihood of success. There is still great value in engaging stakeholders later in the EBT implementation process, such as after active implementation has already begun, to further explain the barriers and facilitators of EBT implementation and generate strategies or solutions to address those barriers and capitalizing on facilitators. However, a key benefit of stakeholder engagement may be the knowledge and buy-in gained prior to implementation that can help researchers and implementing partners more successfully initially implement EBTs.

Of the 106 projects, we identified two highly participatory projects that demonstrate the various ways in which stakeholders can be engaged throughout the EBT implementation process, including to co-design EBTs or adapt existing EBTs to better fit distinct contexts. Importantly, these are exceptional exemplars that may guide how other projects could engage stakeholders throughout the implementation process. These were not representative of the typical included study. The "An Individualized Mental Health Intervention for Autism Spectrum Disorder (AIM HI)" project engaged stakeholders throughout the EBT implementation process (Lauren Brookman-Frazee et al., 2019). The AIM HI project represents a years-long partnership that engaged stakeholders (caregivers, providers, agency administrators) to first understand barriers to treating autism in community mental health settings (Lauren Brookman-Frazee, Drahota, Stadnick, et al., 2012) then collaboratively develop an evidence-based treatment protocol and therapist training model (Lauren Brookman-Frazee, Drahota, & Stadnick, 2012). Following development and pilot testing (Lauren Brookman-Frazee, Drahota, & Stadnick, 2012), the AIM

HI project has engaged stakeholders to examine therapist (Chlebowski, Magaña, et al., 2018; Drahota et al., 2014) and parent (Chlebowski, Wright, et al., 2018; Stadnick et al., 2013) perspectives of the intervention as well as guide systematic adaptation of the intervention for Latinx families (Chlebowski et al., 2020). By engaging stakeholders throughout the AIM HI project, Brookman-Frazee and colleagues were able to preempt barriers and adapt their implementation accordingly. Future research should similarly aim to engage stakeholders throughout the *entire* EBT implementation process, including before decisions are made about which EBTs should be implemented, when planning for implementation, and following initial implementation.

The second example of a project that deeply engaged and *empowered* stakeholders is Kataoka and colleagues' (2006) community-participatory work to implement an intervention for children exposed to violence. This project engaged stakeholders (researchers; providers; caregivers; agency administrators; community members) throughout the implementation process and discussed all aspects of the project with stakeholders, "including the research design, recruitment, intervention components, and adapting existing services to complement the [intervention]" (Kataoka et al., 2006, p. 91). To begin, stakeholders and researchers also drafted a memorandum of understanding to define their partnership. Stakeholders and researchers then jointly decided on the EBT [Cognitive Behavioral Intervention for Trauma in Schools (CBITS; CITE)] and collaboratively adapted it. These studies are distinct in their engagement with stakeholders as they began engagement early in the process, which allowed them to adapt to stakeholder feedback and grant stakeholders more power in the process. Future work should aim to engage stakeholders earlier in EBT implementation projects and grant them more decision-making power. These efforts are essential not only to ensuring initial implementation efforts are

more successful but also to ensuring that stakeholders are valued as equal partners in EBT implementation efforts. This is important for ensuring the just distribution of power in EBT implementation projects, an essential element of increasing health equity.

The extent and quality of the reporting on stakeholder engagement was variable within our included projects. Overall, the quality of reporting on stakeholder engagement was high—a majority of projects reported on all aspects of Proctor and colleagues (2013) rubric. However, there was significant variation by reporting element. Targets were most frequently reported, with nearly all studies (97.1%) reporting what they were intending to target with stakeholder engagement (e.g., program materials, implementation processes). Implementation outcomes likely to be affected by stakeholder engagement were among the least reported, with slightly more than half of projects (54.4%) linking stakeholder engagement efforts to a specific implementation outcome regardless of if they actually measured an implementation outcome. This finding may be explained in part by studies that were published prior to the publishing of Proctor and colleagues' guidelines in 2013 (n = 21; 20.4%). Further, some projects may not consider stakeholder engagement as a discrete implementation strategy, and therefore may not have considered its benefits within the context of defined implementation outcomes. Despite this, conceptualizing stakeholder engagement as an implementation strategy and improving reporting on it (specifically in relation to implementation outcomes likely to be affected) may influence other researchers to engage stakeholders given its potential benefits for EBT implementation. Ensuring efforts are specified such that stakeholder engagement can be replicated with other projects is essential to increasing engagement of stakeholders within children's mental health EBT implementation projects.

Finally, relatively few projects reported impacts of stakeholder engagement on Proctor

and colleague's (2011a) taxonomy of implementation outcomes. No projects randomized the use of stakeholder engagement, and therefore it was impossible to isolate the effects of stakeholder engagement on outcomes. However, on some projects, mostly qualitative or mixed-methods, authors discussed their perceived benefits of stakeholder engagement on implementation outcomes. These benefits were most frequently in terms of increased acceptability and feasibility. For example, Rose-Clarke and colleagues (2020) engaged stakeholders to inform the implementation of group interpersonal therapy for adolescents with depression in rural Nepal. They reported adaptations to "optimize treatment delivery" and "emphasize developmental and cultural aspects of depression," such as "integrating therapy into secondary schools for delivery by school nurses and lay community members…" and "using locally acceptable terms for mental illness…" (Rose-Clarke et al., 2020, p. 12). Projects also discussed the benefits of stakeholder engagement on other implementation outcomes, including adoption and penetration. Donenberg and colleagues' (Donenberg et al., 2019) discussed the benefits of engaging stakeholders during the exploration phase to "develop a genuine community-engaged approach…" that "laid the foundation for widescale buy-in" to a cognitive behavioral therapy intervention intended to mental health symptoms and improve antiretroviral therapy adherence for Rwandan adolescents living with HIV. Importantly, though projects did not frequently discuss the impacts of stakeholder engagement on implementation outcomes, we caution from inferring from this synthesis that stakeholder engagement does not have substantial benefits on implementation. The noted lack of discussion of benefits of stakeholder engagement is likely a result of the current scope of stakeholder engagement in EBT implementation projects, in which stakeholders are typically engaged following the initial implementation to *explain* barriers. As stakeholders continue to be involved in EBT implementation efforts, hopefully with greater depth and earlier

in the implementation process, further work is needed to outline the full extent of benefits of stakeholder engagement on EBT implementation.

Broad strengths of the literature

The included projects had a number of strengths. Notably, projects spanned a variety of countries and settings. While the majority of projects were based in the United States, we identified 22 different countries in which stakeholders were engaged to inform child mental health focused-EBT implementation. Projects also engaged stakeholders to implement EBTs in a variety of settings, including public mental health, schools, juvenile justice settings, child welfare and advocacy centers, and other community-based settings. Providers were most commonly engaged; however, included studies engaged with a variety of stakeholders, including growing numbers of agency administrators as well as policymakers and key stakeholders with mental health systems. Finally, projects employed a variety of different methods to engage stakeholders. Projects balanced depth of feedback by using qualitative interviews, broad perspectives via widely disseminated quantitative surveys, and other non-data-based approaches like community advisory boards and established community-research partnerships.

Limitations of the current study

Our findings should be considered within the context of several limitations. First, we only examined peer-reviewed empirical studies. As such, any study protocols or non-peer-reviewed articles were excluded. We acknowledge that some researchers may choose to outline engagement methods or existing partnerships in study protocols. Additionally, publicly funded EBT implementation projects may report processes and results in gray literature (i.e., reports) and not empirical articles. These would not have been captured in our review. Second, we recognize that our ability to review stakeholder engagement is dependent on the extent to which

these activities are reported. It is possible that more stakeholder engagement occurred than was reported in in our included studies. Improved reporting of stakeholder engagement activities, following recommended standards for specifying and reporting on implementation strategies (Proctor et al., 2013), may help to elucidate the full extent of stakeholder engagement in children's mental health EBT implementation efforts. Third, regarding reporting, many included studies were published before or around the time that Proctor and colleagues published both their taxonomy of implementation outcomes (2011a: n = 14 prior to 2011) as well as reporting guidelines for implementation strategies (2013; n = 21 prior to 2013). This may also account for variable and low reporting quality of stakeholder engagement and its impact on implementation outcomes in our review. Finally, our review may not adequately describe the impacts of stakeholder engagement. Stakeholder engagement was generally one piece of a much larger implementation effort, and implementation outcomes were usually discussed in terms of the full project. As such, aside from specific mentions of program adaptations that were informed by stakeholders to improve acceptability, extraction was not able to discern the specific impact of stakeholder engagement on implementation outcomes.

Conclusion

There is a pervasive mental health treatment gap for children across the globe. Dissemination and implementation science aims to increase access to EBTs; however, there are a multitude of implementation challenges that arise when delivering EBTs in complex, highly variable real-world settings, especially those with low resources. Engaging stakeholders in children's mental health EBT implementation projects may increase the likelihood of implementation success. We found that while many different types of stakeholders have been engaged, they are typically engaged during the following the initial implementation to explain

implementation barriers and facilitators. Stakeholders were generally not engaged with a degree of depth that would allow them to influence key decisions in the EBT implementation process. Key steps to improve stakeholder engagement efforts and advance our understanding of its benefits include: increasing variety of stakeholders engaged to include clients and payers; engaging stakeholders earlier in the implementation process and granting them more decision-making power; comprehensively reporting on stakeholder engagement activities; and, exploring and documenting the impacts of stakeholder engagement on EBT implementation outcomes. Such efforts may not only address barriers to EBT implementation, but also improve health equity and ensure the just distribution of power in EBT implementation efforts.

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Appendix 1: Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	1
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	2-3
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	11
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	11
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	12
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	13-14
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	13
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	Appendix 2

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	14
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	14-17
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	Table 1
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	NA
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	18-19
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	19 & Figure 3
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	19-28
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	NA
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	19-28
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	19-28
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions	29

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
		and objectives, and consider the relevance to key groups.	
Limitations	20	Discuss the limitations of the scoping review process.	37-38
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	38-39
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	NA

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.
* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.
† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).
‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.
§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMAScR): Checklist and Explanation. Ann Intern Med. 2018;169:467–473. doi: 10.7326/M18-0850

Appendix 2: Final Search Strategies

These strategies are designed to capture articles discussing stakeholders, mental health therapy, implementation, and evidence-based practice. All searches were limited to English-language journal articles (not conference abstracts, book chapters, or dissertations).

Search strategies are provided for 7 databases: Medline (Ebsco), PsycInfo (Ebsco), Embase (Elsevier), ERIC (Ebsco), CINAHL Complete (Ebsco), Scopus, Web of Science Core Collection

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Medline (Ebsco) – 876 references

MH "Community Participation+" OR MH "Patient Participation+" OR MH "Caregivers" OR TI (Stakeholder OR stakeholders OR "key informant" OR "key informants" OR "engagement framework" OR "engagement method" OR "facilitating engagement" OR "community academic partnership" OR "community advocate" OR "community advocates") OR AB (Stakeholder OR stakeholders OR "key informant" OR "key informants" OR "engagement framework" OR "engagement method" OR "facilitating engagement" OR "community academic partnership" OR "community advocate" OR "community advocates") OR TI ((patient OR patients OR consumer OR consumers OR client OR clients OR public OR community OR communities OR customer OR customers OR agency OR agencies OR government* OR payer OR payers OR purchaser* OR insurance OR medicare OR Medicaid OR administrator* OR physician* OR clinician* OR provider* OR layperson* OR laypeople OR lay OR caregiver* OR employer*) N3 (engage* OR engaging OR collaborat* OR participat* OR partner* OR involve* OR input)) OR AB ((patient OR patients OR consumer OR consumers OR client OR clients OR public OR community OR communities OR customer OR customers OR agency OR agencies OR government* OR payer OR payers OR purchaser* OR insurance OR medicare OR Medicaid OR administrator* OR physician* OR clinician* OR provider* OR layperson* OR laypeople OR lay OR caregiver* OR employer*) N3 (engage* OR engaging OR collaborat* OR participat* OR partner* OR involve* OR input))

AND

MH "Mental Health Services+" OR MH "Psychotherapy+" OR MH "Psychological Techniques+" OR MH "Psychiatric Somatic Therapies+" OR TI (psychotherapy OR "behavioral therapy" OR "behavior therapy" OR "behaviour therapy" OR "behavioural therapy" OR "mental healthcare" OR "behavioral healthcare" OR "behavioural healthcare" OR (psychologic* OR psychiatric OR psychosocial OR behavioral OR behavioural OR "mental health" OR addiction) N5 (intervention OR treatment OR treatments OR therapy OR therapies OR care OR healthcare OR support OR practice OR practices OR service OR services)) OR AB (psychotherapy OR "behavioral therapy" OR "behavior therapy" OR "behaviour therapy" OR "behavioural therapy" OR "mental healthcare" OR "behavioral healthcare" OR "behavioural healthcare" OR (psychologic* OR psychiatric OR psychosocial OR behavioral OR behavioural OR "mental health" OR addiction) N5 (intervention OR treatment OR treatments OR therapy OR therapies OR care OR healthcare OR support OR practice OR practices OR service OR services))

AND

TI (Implement* OR disseminat* OR diffusion OR translation*) OR AB (Implement* OR disseminat* OR diffusion OR translation*)

AND

MH “Evidence-Based Practice+” OR TI (“evidence based” OR “empirically supported” OR “best practice” OR “best practices”) OR AB (“evidence based” OR “empirically supported” OR “best practice” OR “best practices”)

AND

LA English

PscyInfo – 1,189 references

DE "Stakeholder" OR DE "Client Participation" OR DE "Community Advocacy" OR DE "Government Programs" OR DE "Medicaid" OR DE "Medicare" OR DE "Social Security" OR DE "Welfare Services (Government)" OR DE "Caregivers" OR DE "Employer Attitudes" OR TI (Stakeholder OR stakeholders OR “key informant” OR “key informants” OR “engagement framework” OR “engagement method” OR “facilitating engagement” OR “community academic partnership” OR “community advocate” OR “community advocates”) OR AB (Stakeholder OR stakeholders OR “key informant” OR “key informants” OR “engagement framework” OR “engagement method” OR “facilitating engagement” OR “community academic partnership” OR “community advocate” OR “community advocates”) OR TI ((patient OR patients OR consumer OR consumers OR client OR clients OR public OR community OR communities OR customer OR customers OR agency OR agencies OR government* OR payer OR payers OR purchaser* OR insurance OR medicare OR Medicaid OR administrator* OR physician* OR clinician* OR provider* OR layperson* OR laypeople OR lay OR caregiver* OR employer*) N3 (engage* OR engaging OR collaborat* OR participat* OR partner* OR involve* OR input)) OR AB ((patient OR patients OR consumer OR consumers OR client OR clients OR public OR community OR communities OR customer OR customers OR agency OR agencies OR government* OR payer OR payers OR purchaser* OR insurance OR medicare OR Medicaid OR administrator* OR physician* OR clinician* OR provider* OR layperson* OR laypeople OR lay OR caregiver* OR employer*) N3 (engage* OR engaging OR collaborat* OR participat* OR partner* OR involve* OR input))

AND

DE "Mental Health Services" OR DE "Community Mental Health Services" OR DE "Preventive Mental Health Services" OR DE "Behavioral Health Services" OR DE "Psychotherapy" OR DE "Adlerian Psychotherapy" OR DE "Adolescent Psychotherapy" OR DE "Affirmative Therapy" OR DE "Analytical Psychotherapy" OR DE "Autogenic Training" OR DE "Brief Psychotherapy" OR DE "Brief Relational Therapy" OR DE "Child Psychotherapy"

OR DE "Client Centered Therapy" OR DE "Conversion Therapy" OR DE "Couples Therapy" OR DE "Eclectic Psychotherapy" OR DE "Emotion Focused Therapy" OR DE "Existential Therapy" OR DE "Experiential Psychotherapy" OR DE "Expressive Psychotherapy" OR DE "Eye Movement Desensitization Therapy" OR DE "Feminist Therapy" OR DE "Geriatric Psychotherapy" OR DE "Gestalt Therapy" OR DE "Group Psychotherapy" OR DE "Guided Imagery" OR DE "Humanistic Psychotherapy" OR DE "Hypnotherapy" OR DE "Individual Psychotherapy" OR DE "Insight Therapy" OR DE "Integrative Psychotherapy" OR DE "Interpersonal Psychotherapy" OR DE "Logotherapy" OR DE "Narrative Therapy" OR DE "Network Therapy" OR DE "Persuasion Therapy" OR DE "Primal Therapy" OR DE "Psychoanalysis" OR DE "Psychodrama" OR DE "Psychodynamic Psychotherapy" OR DE "Psychotherapeutic Counseling" OR DE "Psychotherapeutic Techniques" OR DE "Rational Emotive Behavior Therapy" OR DE "Reality Therapy" OR DE "Relationship Therapy" OR DE "Solution Focused Therapy" OR DE "Strategic Therapy" OR DE "Supportive Psychotherapy" OR DE "Transactional Analysis" OR DE "Psychotherapeutic Techniques" OR DE "Active Listening" OR DE "Animal Assisted Therapy" OR DE "Autogenic Training" OR DE "Brief Relational Therapy" OR DE "Centering" OR DE "Cotherapy" OR DE "Dream Analysis" OR DE "Empty Chair Technique" OR DE "Ericksonian Psychotherapy" OR DE "Free Association" OR DE "Guided Imagery" OR DE "Life Review" OR DE "Mirroring" OR DE "Morita Therapy" OR DE "Motivational Interviewing" OR DE "Mutual Storytelling Technique" OR DE "Network Therapy" OR DE "Paradoxical Techniques" OR DE "Psychodrama" OR DE "Treatment" OR DE "Addiction Treatment" OR DE "Adjunctive Treatment" OR DE "Adventure Therapy" OR DE "Aftercare" OR DE "Alternative Medicine" OR DE "Anxiety Management" OR DE "Behavior Modification" OR DE "Bibliotherapy" OR DE "Caregiving" OR DE "Client Transfer" OR DE "Client Treatment Matching" OR DE "Cognitive Behavior Therapy" OR DE "Cognitive Stimulation Therapy" OR DE "Cognitive Techniques" OR DE "Computer Assisted Therapy" OR DE "Counseling" OR DE "Creative Arts Therapy" OR DE "Cross Cultural Treatment" OR DE "Disease Management" OR DE "Habilitation" OR DE "Health Care Services" OR DE "Horticulture Therapy" OR DE "Hospice" OR DE "Human Potential Movement" OR DE "Human Services" OR DE "Hydrotherapy" OR DE "Institutionalization" OR DE "Integrated Services" OR DE "Interdisciplinary Treatment Approach" OR DE "Intervention" OR DE "Involuntary Treatment" OR DE "Language Therapy" OR DE "Life Sustaining Treatment" OR DE "Maintenance Therapy" OR DE "Medical Treatment (General)" OR DE "Mental Health Programs" OR DE "Milieu Therapy" OR DE "Mind Body Therapy" OR DE "Mindfulness-Based Interventions" OR DE "Movement Therapy" OR DE "Multimodal Treatment Approach" OR DE "Multisystemic Therapy" OR DE "Outpatient Treatment" OR DE "Pain Management" OR DE "Partial Hospitalization" OR DE "Personal Therapy" OR DE "Physical Treatment Methods" OR DE "Private Practice" OR DE "Psychoeducation" OR DE "Psychotherapy" OR DE "Rehabilitation" OR DE "Relaxation Therapy" OR DE "Respite Care" OR DE "Self-Help Techniques" OR DE "Sex Therapy" OR DE "Social Casework" OR DE "Sociotherapy" OR DE "Speech Therapy" OR DE "Spiritual Care" OR DE "Symptoms Based Treatment" OR DE "Therapeutic Processes" OR DE "Trauma-Informed Care" OR DE "Trauma Treatment" OR DE "Treatment Guidelines" OR DE "Treatment Outcomes" OR DE "Treatment Planning" OR DE "Video-Based Interventions" OR TI (psychotherapy OR “behavioral therapy” OR “behavior therapy” OR “behaviour therapy” OR “behavioural therapy” OR “mental healthcare” OR “behavioral healthcare” OR “behavioural healthcare” OR (psychologic* OR psychiatric OR psychosocial OR behavioral OR behavioural OR “mental health” OR addiction) N5 (intervention

OR treatment OR treatments OR therapy OR therapies OR care OR healthcare OR support OR practice OR practices OR service OR services)) OR AB (psychotherapy OR “behavioral therapy” OR “behavior therapy” OR “behaviour therapy” OR “behavioural therapy” OR “mental healthcare” OR “behavioral healthcare” OR “behavioural healthcare” OR (psychologic* OR psychiatric OR psychosocial OR behavioral OR behavioural OR “mental health” OR addiction) N5 (intervention OR treatment OR treatments OR therapy OR therapies OR care OR healthcare OR support OR practice OR practices OR service OR services))

AND

DE "Program Development" OR TI (Implement* OR disseminat* OR diffusion OR translation*) OR AB (Implement* OR disseminat* OR diffusion OR translation*)

AND

DE "Best Practices" OR DE "Evidence Based Practice" OR TI (“evidence based” OR “empirically supported” OR “best practice” OR “best practices”) OR AB (“evidence based” OR “empirically supported” OR “best practice” OR “best practices”)

AND

LA English

AND

PT Journal

Embase – 1,317 references

('community participation'/exp OR 'patient participation'/exp OR 'stakeholder engagement'/exp OR 'caregiver'/exp OR 'advocacy group'/exp OR (Stakeholder OR stakeholders OR “key informant” OR “key informants” OR “engagement framework” OR “engagement method” OR “facilitating engagement” OR “community academic partnership” OR “community advocate” OR “community advocates”):ti,ab OR ((patient OR patients OR consumer OR consumers OR client OR clients OR public OR community OR communities OR customer OR customers OR agency OR agencies OR government* OR payer OR payers OR purchaser* OR insurance OR medicare OR Medicaid OR administrator* OR physician* OR clinician* OR provider* OR layperson* OR laypeople OR lay OR caregiver* OR employer*) NEAR/3 (engage* OR engaging OR collaborat* OR participat* OR partner* OR involve* OR input)):ti,ab)

AND

('mental health care'/exp OR 'psychotherapy'/exp OR (psychotherapy OR “behavioral therapy” OR “behavior therapy” OR “behaviour therapy” OR “behavioural therapy” OR “mental healthcare” OR “behavioral healthcare” OR “behavioural healthcare”):ti,ab OR ((psychologic*

OR psychiatric OR psychosocial OR behavioral OR behavioural OR “mental health” OR addiction) NEAR/5 (intervention OR treatment OR treatments OR therapy OR therapies OR care OR healthcare OR support OR practice OR practices OR service OR services)):ti,ab)

AND

('dissemination'/exp OR 'implementation'/exp OR 'implementation science'/exp OR 'translational research'/exp OR (Implement* OR disseminat* OR diffusion OR translation*):ti,ab)

AND

('evidence based practice'/exp OR (“evidence based” OR “empirically supported” OR “best practice” OR “best practices”):ti,ab)

AND

[English]/lim

NOT
‘conference abstract’/it

CINAHL Complete (Ebsco) – 765 references

MH "Community-Institutional Relations" OR MH "Stakeholder Participation" OR MH "Consumer Participation" OR MH "Caregivers" OR MH "Patient Advocacy" OR (MH "Insurance Carriers" OR TI (Stakeholder OR stakeholders OR “key informant” OR “key informants” OR “engagement framework” OR “engagement method” OR “facilitating engagement” OR “community academic partnership” OR “community advocate” OR “community advocates”) OR AB (Stakeholder OR stakeholders OR “key informant” OR “key informants” OR “engagement framework” OR “engagement method” OR “facilitating engagement” OR “community academic partnership” OR “community advocate” OR “community advocates”) OR TI ((patient OR patients OR consumer OR consumers OR client OR clients OR public OR community OR communities OR customer OR customers OR agency OR agencies OR government* OR payer OR payers OR purchaser* OR insurance OR medicare OR Medicaid OR administrator* OR physician* OR clinician* OR provider* OR layperson* OR laypeople OR lay OR caregiver* OR employer*) N3 (engage* OR engaging OR collaborat* OR participat* OR partner* OR involve* OR input)) OR AB ((patient OR patients OR consumer OR consumers OR client OR clients OR public OR community OR communities OR customer OR customers OR agency OR agencies OR government* OR payer OR payers OR purchaser* OR insurance OR medicare OR Medicaid OR administrator* OR physician* OR clinician* OR provider* OR layperson* OR laypeople OR lay OR caregiver* OR employer*) N3 (engage* OR engaging OR collaborat* OR participat* OR partner* OR involve* OR input))

AND

MH "Mental Health Services+" OR MH "Psychotherapy+" OR MH "Somatic Therapies, Psychiatric+" OR MH "Psychological Techniques+" OR TI (psychotherapy OR “behavioral therapy” OR “behavior therapy” OR “behaviour therapy” OR “behavioural therapy” OR “mental healthcare” OR “behavioral healthcare” OR “behavioural healthcare” OR (psychologic* OR psychiatric OR psychosocial OR behavioral OR behavioural OR “mental health” OR addiction) N5 (intervention OR treatment OR treatments OR therapy OR therapies OR care OR healthcare OR support OR practice OR practices OR service OR services)) OR AB (psychotherapy OR “behavioral therapy” OR “behavior therapy” OR “behaviour therapy” OR “behavioural therapy” OR “mental healthcare” OR “behavioral healthcare” OR “behavioural healthcare” OR (psychologic* OR psychiatric OR psychosocial OR behavioral OR behavioural OR “mental health” OR addiction) N5 (intervention OR treatment OR treatments OR therapy OR therapies OR care OR healthcare OR support OR practice OR practices OR service OR services))

AND

MH "Implementation Science" OR MH "Program Implementation" OR MH "Diffusion of Innovation+" OR TI (Implement* OR disseminat* OR diffusion OR translation*) OR AB (Implement* OR disseminat* OR diffusion OR translation*)

AND

MH "Professional Practice, Evidence-Based+" OR TI (“evidence based” OR “empirically supported” OR “best practice” OR “best practices”) OR AB (“evidence based” OR “empirically supported” OR “best practice” OR “best practices”)

AND

LA English

ERIC (Ebsco) – 62 references

DE "Stakeholders" OR DE "Learner Engagement" OR DE "Citizen Participation" OR DE "Teacher Collaboration" OR DE "Cooperative Planning" OR DE "Agency Cooperation" OR DE "School Community Relationship" OR TI (Stakeholder OR stakeholders OR “key informant” OR “key informants” OR “engagement framework” OR “engagement method” OR “facilitating engagement” OR “community academic partnership” OR “community advocate” OR “community advocates”) OR AB (Stakeholder OR stakeholders OR “key informant” OR “key informants” OR “engagement framework” OR “engagement method” OR “facilitating engagement” OR “community academic partnership” OR “community advocate” OR “community advocates”) OR TI ((patient OR patients OR consumer OR consumers OR client OR clients OR public OR community OR communities OR customer OR customers OR agency OR agencies OR government* OR payer OR payers OR purchaser* OR insurance OR medicare OR Medicaid OR administrator* OR physician* OR clinician* OR provider* OR layperson* OR laypeople OR lay OR caregiver* OR employer*) N3 (engage* OR engaging OR collaborat* OR participat* OR partner* OR involve* OR input)) OR AB ((patient OR patients OR consumer OR

consumers OR client OR clients OR public OR community OR communities OR customer OR customers OR agency OR agencies OR government* OR payer OR payers OR purchaser* OR insurance OR medicare OR Medicaid OR administrator* OR physician* OR clinician* OR provider* OR layperson* OR laypeople OR lay OR caregiver* OR employer*) N3 (engage* OR engaging OR collaborat* OR participat* OR partner* OR involve* OR input))

AND

DE "Psychoeducational Methods" OR DE "Psychotherapy" OR DE "Milieu Therapy" OR DE "Relaxation Training" OR DE "Mental Health Programs" OR DE "Art Therapy" OR DE "Bibliotherapy" OR DE "Group Therapy" OR DE "Psychological Services" OR DE "Cognitive Restructuring" OR DE "Behavior Modification" OR DE "Contingency Management" OR DE "Desensitization" OR DE "Positive Behavior Supports" OR TI (psychotherapy OR “behavioral therapy” OR “behavior therapy” OR “behaviour therapy” OR “behavioural therapy” OR “mental healthcare” OR “behavioral healthcare” OR “behavioural healthcare” OR (psychologic* OR psychiatric OR psychosocial OR behavioral OR behavioural OR “mental health” OR addiction) N5 (intervention OR treatment OR treatments OR therapy OR therapies OR care OR healthcare OR support OR practice OR practices OR service OR services)) OR AB (psychotherapy OR “behavioral therapy” OR “behavior therapy” OR “behaviour therapy” OR “behavioural therapy” OR “mental healthcare” OR “behavioral healthcare” OR “behavioural healthcare” OR (psychologic* OR psychiatric OR psychosocial OR behavioral OR behavioural OR “mental health” OR addiction) N5 (intervention OR treatment OR treatments OR therapy OR therapies OR care OR healthcare OR support OR practice OR practices OR service OR services))

AND

DE "Program Implementation" OR TI (Implement* OR disseminat* OR diffusion OR translation*) OR AB (Implement* OR disseminat* OR diffusion OR translation*)

AND

DE "Evidence Based Practice" OR DE "Best Practices" OR TI (“evidence based” OR “empirically supported” OR “best practice” OR “best practices”) OR AB (“evidence based” OR “empirically supported” OR “best practice” OR “best practices”)

AND

LA English

AND

PU “Journal articles”

Scopus – 1079 references

TITLE-ABS-KEY-AUTH(Stakeholder OR stakeholders OR "key informant" OR "key informants" OR "engagement framework" OR "engagement method" OR "facilitating engagement" OR "community academic partnership" OR "community advocate" OR "community advocates" OR ((patient OR patients OR consumer OR consumers OR client OR clients OR public OR community OR communities OR customer OR customers OR agency OR agencies OR government* OR payer OR payers OR purchaser* OR insurance OR medicare OR Medicaid OR administrator* OR physician* OR clinician* OR provider* OR layperson* OR laypeople OR lay OR caregiver* OR employer*) W/3 (engage* OR engaging OR collaborat* OR participat* OR partner* OR involve* OR input)))

AND

TITLE-ABS-KEY-AUTH(psychotherapy OR "behavioral therapy" OR "behavior therapy" OR "behaviour therapy" OR "behavioural therapy" OR "mental healthcare" OR "behavioral healthcare" OR "behavioural healthcare" OR ((psychologic* OR psychiatric OR psychosocial OR behavioral OR behavioural OR "mental health" OR addiction) W/5 (intervention OR treatment OR treatments OR therapy OR therapies OR care OR healthcare OR support OR practice OR practices OR service OR services)))

AND

TITLE-ABS-KEY-AUTH(Implement* OR disseminat* OR diffusion OR translation*)

AND

TITLE-ABS-KEY-AUTH("evidence based" OR "empirically supported" OR "best practice" OR "best practices")

AND

LANGUAGE(English)

AND

DOCTYPE(ar OR cp OR ed OR le OR no OR re OR sh)

Web of Science Core Collection (Clarivate) – 781 references

TOPIC: Stakeholder OR stakeholders OR "key informant" OR "key informants" OR "engagement framework" OR "engagement method" OR "facilitating engagement" OR "community academic partnership" OR "community advocate" OR "community advocates" OR ((patient OR patients OR consumer OR consumers OR client OR clients OR public OR community OR communities OR customer OR customers OR agency OR agencies OR

government* OR payer OR payers OR purchaser* OR insurance OR medicare OR Medicaid OR administrator* OR physician* OR clinician* OR provider* OR layperson* OR laypeople OR lay OR caregiver* OR employer*) NEAR/3 (engage* OR engaging OR collaborat* OR participat* OR partner* OR involve* OR input))

AND

TOPIC: psychotherapy OR "behavioral therapy" OR "behavior therapy" OR "behaviour therapy" OR "behavioural therapy" OR "mental healthcare" OR "behavioral healthcare" OR "behavioural healthcare" OR ((psychologic* OR psychiatric OR psychosocial OR behavioral OR behavioural OR "mental health" OR addiction) NEAR/5 (intervention OR treatment OR treatments OR therapy OR therapies OR care OR healthcare OR support OR practice OR practices OR service OR services))

AND

TOPIC: Implement* OR disseminat* OR diffusion OR translation*

AND

TOPIC: "evidence based" OR "empirically supported" OR "best practice" OR "best practices"

AND

LANGUAGE: English

AND

DOCUMENT TYPE: article, early access, editorial material, letter, proceedings paper, retraction, review