# **STUDY PROTOCOL**





# Advancing implementation of single session interventions in schools: a protocol for a qualitative study

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# Abstract

**Background** Schools are one of the most common settings in which youth seek mental health services, yet existing school-based mental health interventions are often difficult to implement due to time, cost, and staffing limitations. Digital, self-administered Single Session Interventions (SSIs) are evidence-based supports that are intentionally structured to deliver a clinically-meaningful dosage of evidence-based content within one session. Although multiple studies have demonstrated the clinical effectiveness of school-based SSIs, there have been no systemic efforts to understand how SSIs can be practically implemented in schools. The goal of this project is to partner with students, parents, and school staff to identify factors that impact the implementation of SSIs and understand how SSIs can be sustainably integrated as mental health supports into school mental health infrastructure.

**Methods** We will conduct focus groups (five groups, total n = 35-45) among community members (i.e., students, parents/caregivers, teachers, school administrators, and school mental health providers) to assess perceived facilitators and barriers to the effective implementation of evidence-based SSIs in schools (Aim 1). We will then work in partnership with community members (n = 10-15) to co-design multi-level implementation strategies (i.e., student-directed, staff-directed, system-directed) for increasing uptake and promoting sustainability of school-based SSIs (Aim 2). We will use inductive coding to thematically analyze qualitative data from group sessions. This study is being conducted within the Lake Washington School District in the Seattle, Washington region.

**Discussion** The proposed project will be the first to investigate facilitators and barriers to real-world implementation of SSIs in schools and strategies to improve implementation. Future studies may test the effectiveness of the generated implementation strategies on outcomes such as SSI uptake over time.

Keywords School, Youth mental health, Digital mental health, Single Session Interventions

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# **Contributions to the literature**

- Although studies have demonstrated the clinical effectiveness of school-based SSIs, there have been no systemic efforts to understand how SSIs can be practically implemented in schools.
- This study will be the first to systematically investigate barriers and facilitators to implementation of digital, self-administered SSIs in schools
- This study will use the Consolidated Framework for Implementation Research (CFIR) to guide the identification of determinants and co-creation of implementation strategies

## Background

In 2021, over forty percent of youth reported experiencing persistent feelings of sadness or hopelessness [1]. Yet approximately half of youth living with mental health disorders do not receive any treatment [2-5]. School-based mental health services hold potential to facilitate greater access to mental health support. Schools are one of the most common settings where youth, particularly those who are underserved by traditional mental health services, seek mental health support [6, 7]. Unfortunately, there is a shortage of school mental health providers and schools often experience time and funding limitations that restrict their ability to implement resource-intensive mental health interventions [8-10]. Moreover, when school-based mental health interventions are implemented, such interventions often have poor sustainability once "start-up enthusiasm and resources are exhausted," [8] resulting in many students having limited, sporadic access to mental health support in moments of need. Interventions must be implemented that leverage the promise of school-based services while accounting for the real-world constraints of school settings [11, 12].

Digital, self-administered mental health interventions could fill the gap in sustainable mental health supports for schools. Digital, self-administered mental health interventions offer strengths such as being low-cost, being available "on-demand" during times when an individual is in distress, and allowing individuals to seek support who may not be interested in seeing a mental health provider due to stigma or previous negative experiences with providers [13–17]. In school settings, digital, self-administered interventions allow students to access mental health support without requiring facilitation from already overburdened school providers. A major challenge with multi-component digital, self-administered mental health interventions, however, is low retention. For example, in one trial of tion provided to high school students, the majority of students who logged in to the program completed only one of the five modules. Lack of time was one of the most commonly endorsed reasons to explain nonuse [18].

Single Session Interventions (SSIs) proactively consider the reality that individuals may not be able to or may not want to engage in programs for extended periods. SSIs are programs that are intentionally structured to deliver a clinically meaningful dosage of evidence-based content within one session. SSIs are not designed to replace longer-term interventions but rather to provide a more scalable method for receiving evidence-based care that can add to a portfolio of available services. Additionally, the SSI approach does not limit an individual from completing multiple SSIs, each targeting different mechanisms, or the same SSI multiple times. Rather, the SSI approach prioritizes creating meaningful change in one session so that if only one session is feasible to implement, it may still have a positive impact. SSIs work by targeting proximal mechanisms of transdiagnostic (cross-disorder) problems (e.g., hopelessness, agency) that can theoretically change in a short period of time [19]. Common elements across effective SSIs include the promotion of autonomy, relatedness, and competency in line with Self-Determination Theory [20]. A meta-analysis of 50 Randomized Controlled Trials (RCTs) including 10,508 youth shows significant positive effects of SSIs on youth mental health problems such as anxiety and depression [21]. Indeed for anxiety, SSIs show comparable effect sizes to longer-term interventions; SSIs targeting anxiety show an overall effect size of Hedges g = 0.56 at post-intervention [21], while interventions targeting anxiety that are 12–14 sessions show an overall effect size of Hedges g=0.61 at post-intervention [22]. Other work suggests that positive benefits from a 30-min, self- administered (digital) SSI can be seen as far out as 9 months post-intervention [23].

There have been no systematic efforts to understand how evidence-based, digital SSIs can be effectively implemented as mental health supports in schools. To date, four funded effectiveness trials have examined the use of 30–60 min, self-administered (digital) SSIs in middle- and high-school settings and found positive outcomes on reducing internalizing symptoms as well as high acceptability among students [24–27]. While previous trials examined effectiveness, even effective interventions may not yield desired effects if implementation is poor. Facilitators such as support from administration may increase uptake while barriers such as lack of familiarity among staff or unclear pathways for referral may impede success. No prior research has investigated facilitators and barriers to real-world implementation of SSIs in schools or strategies to improve implementation, research that is essential to ensure that the SSIs will be implemented and sustained once researchers are no longer involved.

The lack of attention in previous research to sustained implementation is reflective of a decades-long struggle to translate evidence-based interventions into real-world practices [28]. Frameworks such as the Consolidated Framework for Implementation Research (CFIR) [29] can be used to understand facilitators and barriers to implementation. CFIR includes five domains: innovation/ intervention, outer setting, inner setting, characteristics of individuals, and implementation process. Examining implementation through each domain enables the identification of multilevel ecological factors that affect the uptake and sustainability of evidence-based practices. In this study, we will use CFIR to elucidate those factors that drive the uptake of SSIs and to inform the design of multi-level implementation strategies, steps that are essential to realize the promise of SSIs as mental health supports in schools. We will also use principles of Human-Centered Design such as "how might we" codesign sessions, to prioritize the needs and goals of end users in the processes of co-designing implementation strategies. The aims of this study are as follows:

Aim 1: Conduct CFIR-guided focus groups (five groups, total n = 35-45) among community members (i.e., students, parents/caregivers, teachers, school administrators, and school mental health providers) to assess perceived facilitators and barriers to the effective implementation of evidence-based SSIs in schools.

Aim 2: Co-design multi-level implementation strategies (i.e., student-directed, staff-directed, system-directed) that address the identified barriers and facilitators to increase uptake and promote sustainability of school-based SSIs in partnership with community members (n = 10-15).

Successful completion of this study will advance our understanding of how evidence-based SSIs can be effectively implemented in schools, ultimately improving the likelihood of youth accessing mental health support.

# Methods

This study follows established methodology for identifying barriers and facilitators to implementation and designing implementation strategies in accordance with CFIR and Human Centered Design principles [30, 31]. The completed Standards for Reporting Qualitative Research (SRQR) checklist is included as Additional File 1.

#### Participants

This study is being conducted within the Lake Washington School District in the Seattle, Washington region. A diverse array of participants (students, parents/caregivers, teachers, administrators, and school mental health providers) was chosen to reflect the need to include multiple perspectives from school community members. Participants will be recruited via emails sent directly to school-affiliated email addresses. Recruitment materials will include information about the purpose of the study, data collection procedures, and an email address to contact for asking questions about the study. Participants will be enrolled first come first serve.

Eligibility criteria for all participants include comfort speaking in English and willingness to have group sessions audio-recorded. Eligibility criteria for students include being enrolled in a high school in the Lake Washington School District and endorsing a self-report question that asks whether they have ever experienced mental health concerns. Eligibility criteria for parents/caregivers include being the legal guardian of a high school student who meets the aforementioned criteria. Eligibility criteria for teachers, school administrators, and school mental health providers include being employed in or providing services for a high school in the Lake Washington School District. School mental health providers may include counselors, social workers, behavior specialists, or psychologists. Participants who are eligible for the study will provide written informed consent/assent prior to participation.

Aim 1: conduct CFIR-guided focus groups among school community members (i.e., students, parents/ caregivers, teachers, school administrators, and school mental health providers) to assess perceived facilitators and barriers to the effective implementation of evidencebased SSIs in schools.

Each focus group will concentrate on a specific subgroup of community members (students, parents/caregivers, teachers, administrators, and school mental health providers) for a total of five focus groups. Focus groups will include 7–9 participants each. Students and parents/caregivers will be compensated with a \$20 gift card upon completion. School staff will be compensated with a \$50 gift card upon completion (this amount is higher to properly compensate them for their professional expertise).

Each focus group will last approximately one hour and will be audio-recorded. We will begin the focus groups by delivering a short (under 10 min) presentation that describes what SSIs are and the evidence behind them.

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The remaining time will be dedicated to eliciting input from participants regarding perceived barriers and facilitators to the implementation of SSIs as mental health supports in schools. This protocol will use semi-structured focus group guides drawing from the CFIR Interview Guide Tool, a publicly available resource created by the lead developers of CFIR that provides template questions related to each CFIR domain [32]. Example questions are presented in Additional File 2.

Recordings from group sessions will be transcribed and identifying information will be removed. A coding team consisting of one PhD student, one research assistant, and one senior faculty, all of whom have expertise in qualitative analysis, will conduct an inductive coding process to thematically analyze data [33]. We will use NVivo to organize and facilitate this coding process [34]. Two research team members will independently identify barriers and facilitators among a subset of data categorized according to the CFIR domains (i.e., innovation/intervention, outer setting, inner setting, characteristics of individuals, and implementation process), with additional potential codes within each domain. We will then meet to discuss the two independently derived coding schemes. We will merge and consolidate the two schemes to create a single official coding scheme. We will independently code the data using the official coding scheme. After all the data is coded, we will meet and compare codes again for reliability and comprehensiveness. A third investigator will blindly code any responses that resulted in disagreement, and finalized codes will be based on majority agreement. This will result in a list of barriers and facilitators generated by participants. Additionally, we will report information regarding the schools that participants attend/work in, including the size and percentage of students in the school who qualify for free or reduced lunches.

Aim 2: co-design multi-level implementation strategies (i.e., student-directed, staff-directed, system-directed) that address the identified barriers and facilitators to increase uptake and promote sustainability of schoolbased SSIs in partnership with community members.

Between 2–3 individuals from each subgroup (students, parents/caregivers, teachers, school administrators, and school mental health professionals) will participate in Aim 2. Bringing community members together at this stage will allow for optimal collaboration for co-design. All participants in Aim 1 will be invited to participate in Aim 2. Enrollment will be limited to the first three individuals in each subgroup who consent. If too few participants from Aim 1 opt to participate in Aim 2, additional participants will be recruited via email. For Aim 2, eligibility criteria will include an additional requirement for participants to commit to taking part in at least two of the three group sessions. Participants that agree to participate in Aim 2 will engage in three group sessions that will occur with roughly one week between each session. If the content in one session is not fully covered, the beginning of the following session will be dedicated to finishing the content in the previous session and a fourth session will be scheduled to finish the remaining content. Each session will last approximately one hour, and participants will be compensated with a gift card upon completion of each session.

# Session 1: orientation and prioritizing barriers and facilitators

One PhD student and one research assistant will lead group sessions. The group facilitators have expertise in group facilitation and single session interventions. We will begin the first session by orienting the participants to the purpose of the three sessions. We will present overall findings from Aim 1 including the main themes that emerged regarding barriers and facilitators to successful implementation of SSIs in schools. Then, participants will be asked to rate each barrier and facilitator on two Likert scales reflecting importance (i.e., How important is it to address this barrier / strengthen this facilitator? 0 = Not at all important, 3 = Very important) and feasibility (i.e., How feasible is it to address this barrier / leverage this facilitator? 0 = Not at all feasible, 3 = Very feasible). Importance will be defined as the extent to which a barrier/facilitator would impact uptake of the SSI. Feasibility will be defined as the extent to which a barrier/facilitator could be easily or conveniently addressed. We will use an instant polling program so that results may be displayed to the group after each question. We will facilitate group discussion if participants substantially disagree in their ratings. Participants will be allowed to alter their ratings if their opinions change after the discussion. After the first session, we will create a 2-dimensional graph plotting the average ratings for each barrier and facilitator, using feasibility as the y-axis and importance as the x-axis [31].

#### Session 2. brainstorming strategies

We will begin the second session by reviewing the findings from Session 1 and showing participants the graph that was created. For barriers and facilitators in the "High importance, high feasibility" quadrant, we will ask "How might we...?" questions, a commonly-used HCD method, to encourage participants to brainstorm implementation strategies [30]. For example, if a barrier to implementation is "Lack of knowledge among staff about SSIs" the group facilitator may ask, "How might we increase knowledge about SSIs among staff?" and a potential implementation strategy that participants may brainstorm is, "Create an FAQ document about SSIs that can be easily accessed online and sent over email." We will lead the participants in identifying multi-level strategies (i.e., student-directed, staff-directed, system-directed) for each barrier/facilitator.

### Session 3. refining and finalizing strategies

We will begin the third session by reviewing the findings from Session 2. Then, we will present a list of 68 implementation strategies that have been collated in a widely used taxonomy called the Expert Recommendations for Implementing Change (ERIC) taxonomy [35] Presenting additional strategies from ERIC will allow the group to consider strategies that may not have been elicited during the previous session. Yet, because ERIC strategies were generated from previous research, they will not be specific to the current community or setting. Combining ERIC and community-generated strategies will leverage previous work while acknowledging the need for specialized strategies. We will lead a discussion regarding whether any of the additional strategies from ERIC would be useful to include and whether the participants brainstormed other strategies over the last week. The participants will then collaboratively reach a consensus on a final list of strategies. The successful completion of this aim will result in a list of multi-level implementation strategies that schools can use to implement SSIs as mental health supports.

# Discussion

The proposed project will be the first to systematically investigate determinants of the real-world implementation of SSIs in schools. The promise of scalable and accessible school-based services to address youth mental health problems is clear, yet only a handful of studies have investigated school-based SSIs, and none have examined their implementation. The proposed project will be the first to elicit facilitators and barriers to the implementation of SSIs in schools and strategies to improve uptake.

Multiple variations of outcomes are possible. For example, student-identified barriers and facilitators may differ greatly from parent- or teacher-identified barriers and facilitators, making barrier prioritization difficult. The strength of bringing together community members in Aim 2 lies in the ability to collaboratively discuss the determinants, increasing the likelihood that consensus can be reached on which ones to target for co-creating strategies. If consensus cannot be reached, we may opt to include as many determinants as possible during Aim 2 and indicate in the final report which determinants and strategies tended to be favored by which groups. Additionally, barriers and facilitators might emerge at levels that are harder for schools to control (e.g., outer setting) than others (e.g., individual), making it challenging to co-create actionable implementation strategies. In this case, strategies could be focused on structural solutions such as supporting advocacy skills.

#### Limitations

A key potential limitation of this protocol is the reliance on a series of group discussions, which could mask important variability in constituents' preferences and perspectives. We considered a survey approach to gather as many opinions as possible, yet this approach would not allow for in-depth exploration of potentially nuanced barriers and facilitators. We additionally considered individual interviews to prioritize depth, yet the sample size would need to be small to remain feasible for a training grant. We ultimately opted to utilize the group format to optimize the study for gathering as many opinions as possible while also allowing for nuanced and open-ended discussions.

#### **Future directions**

A logical next step to this project is testing the effectiveness of the generated implementation strategies on outcomes such as SSI uptake over time. A future study may employ a randomized controlled trial to investigate such outcomes in schools randomized to receive access to the list of implementation strategies compared to those that do not. Successful completion of this project will advance our understanding of how scalable, evidence-based mental health interventions can be effectively implemented in schools, ultimately improving the likelihood of youth accessing mental health support.

#### Abbreviations

- SSI Single Session Intervention
- RCT Randomized Controlled Trial
- CFIR Consolidated Framework for Implementation Research

# **Supplementary Information**

The online version contains supplementary material available at https://doi.org/10.1186/s43058-025-00742-9.

Supplementary Material 1.

Supplementary Material 2.

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# Data availability

Not applicable.

# Declarations

#### Ethics approval and consent to participate

Approval to conduct the study was gained from Northwestern University's Institutional Review Board (STU00222412).

#### **Consent for publication**

Not applicable.

#### **Competing interests**

KAC is a part-time employee at Lyra Health, Inc. JLS has serves on the Scientific Advisory Board for Walden Wise and the Clinical Advisory Board for Koko (unpaid), has received consulting fees from United Health and Woebot, and receives book royalties from New Harbinger; Oxford University Press; and Little, Brown Book Group. She is co-founder and chief scientific advisor for Mindly. No Mindly products were used or are referenced in the present manuscript.

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