Title: Development and Evaluation of a Pilot Short-Term Mental Health Curriculum with Longitudinal Evaluation for Minority Youth

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ABSTRACT.

Background: Minority youth are susceptible to mental health issues in the United States. Early intervention with a mental health curriculum is valuable in building resilience and wellness. Our study's purpose was to design, implement and evaluate a mental health curriculum (*Mental Health Matters)* for minority youth in a local community center.

Methods: We conducted a needs assessment of mental health topics important for minority youth. Pre-and post-lesson surveys were administered at each session to measure students' knowledge and understanding of lesson objectives. We analyzed paired data using a Wilcoxon signed-rank test.

Results: The needs assessment identified a need for educating youth about emotional insight and regulation and interpersonal communication. From the needs assessment, we worked with a local community organization to design a short-term longitudinal mental health curriculum. With the same local community organization, we implemented the curriculum to an after-school program for minority youth. The pre- and post-survey showed the students gained a significant increase of perceived confidence: fundamentals of mental health (p=0.008); stress response, box breathing, and perceiving stress (p=0.046); coping skills (p=0.025); communication styles/conflict resolution strategies (p=0.031). Qualitative feedback from students and administrators indicated strengths of the curriculum included its adaptability and applicability to students' lives.

Conclusion: Overall, we successfully developed a pilot mental health curriculum based on a community needs assessment for minority youth.

Key Words: Mental Health; Curriculum; Adolescent; Health Education; Minority Groups; Ethnic Groups; Community-Academic Partnerships; Early Intervention, Educational; Psychological Resilience, Social Support; Stress, Psychological; Emotion Regulation; Interpersonal Relations; Needs Assessment

INTRODUCTION.

Mental illness is a public health issue in adolescence with suicide as the second leading cause of death in adolescents in America[1]. Studies suggest that one of the most effective methods to address mental health of youth may be to incorporate social interventions in lieu of cognitive or medicinal therapy[2]; and more effective in cases where culturally appropriate treatment can be provided[2]. This is particularly important for racial and ethnic minorities which are less likely to have access to mental health services and more likely to have a severe mental disorder[3]. For instance, one review found that racial/ethnic minority youth were more likely to face barriers to mental health care, including lack of insurance, transportation, as well as cultural stigma surrounding mental health[4]. Immigrant youth similarly face barriers of low insurance rates, language/technological barriers, and discrimination leading to lower usage of mental health services despite equal or greater need[5].

Social interventions to address mental health in youth can be implemented through Community-Academic partnerships. These partnerships not only provide education about mental health, but also help to decrease barriers to care and facilitate navigation of complex social, educational, and healthcare systems[6]. Existing programs such as Brighter Bites, a school-health program being implemented in six cities around the country, as well as mental health curricula utilizing pre-existing infrastructure found in schools, have shown that these partnerships can be very successful[7].

Given that schools are an integral part of youths' lives and of the community, schools make ideal partners to enact a mental health program. Since school attendance is mandatory until ages 16-18 years old in the United States, a school-based setting for a mental health program can reduce barriers, like the need for transportation, the need to search for available resources, and need for insurance[5]. Additionally, several studies have already shown that in countries outside the US[8] school mental health programs have impact on high school students, including "improvements in adolescent mental health knowledge, support seeking, and well-being"[9].

Our paper delves into a collaborative effort between an academic institution and community organization to improve the mental health of minority youth by developing and evaluating a longitudinal mental health curriculum.

METHODS.

This study employed a community-based participatory approach to develop and evaluate a pilot short-term mental health curriculum with longitudinal evaluation targeting minority youth. The study population consisted of 10th-grade students from diverse minority backgrounds, including Asian, Black, and Latino/Hispanic youth, who participated in an after-school program facilitated by the Vickery Meadow Youth Development Foundation in Dallas, Texas. Data collection occurred between 2022 and 2023, encompassing a needs assessment phase, curriculum implementation, and pre- and post-intervention evaluations to measure changes in mental health knowledge and perceived confidence related to key curriculum objectives.

Institutional Review Board

The study was reviewed by the IRB Committee of UT Southwestern Medical Center and determined to fit the criteria for non-regulated research.

Needs Assessment

A needs assessment was conducted in 2022 to determine which specific mental health topics were most important for those who serve minority youth in Dallas. 32 organizations responded to the needs assessment. Likert-scale questions such as “How beneficial would it be to learn about the spectrum of mental health states and the difference between emotions and mental illnesses?” and open-ended questions such as “What mental health topics do you think would be helpful to learn about?” were used to gauge community interest in mental health topics.

Partnership Development

The *Mental Health Matters* (MHM) was founded in 2020 as a medical student organization at University of Texas Southwestern (UTSW) with the mission to improve the mental health of underserved youth in the Dallas area. MHM partnered with the Vickery Meadow Youth Development Foundation (VMYDF), a non-profit that provides opportunities for youth in the Vickery neighborhood in Dallas, Texas. MHM and VMYDF leadership to develop a mental health curriculum using VMYDF’s pre-existing after-school program for minority youth.

Curriculum Design

The needs assessment revealed the importance of the following mental health topics: coping techniques for emotional regulation, interpersonal communication strategies, resources for seeking help and setting safe boundaries. Four lessons were created that focused on: general background information about mental health,

the stress response and stress-relieving tactics, specific coping skills and resources for receiving help, and communication styles and conflict resolution strategies. Lessons were delivered in an interactive small group learning session, utilizing slideshows and various small group discussions and activities designed to increase participant engagement.

Participants

10th grade minorities (Asian, Black, and Latino/Hispanic), who attended VMYDF's after school program.

Measures

We developed a pre- and post- lesson survey for each lesson that included both a knowledge assessment and self-assessment (perceived confidence) to measure the students' understanding of lesson objectives. The knowledge assessment included multiple choice questions assessing how students' knowledge of the lesson objectives changed before and after attending the lesson. The self-assessment portion of the surveys asked students to rate their level of knowledge or skill on a scale of 1 to 5 on the objectives of each session (Likert-scale scoring style). Due to time constraints in implementing the first session of the curriculum, pre-lesson multiple choice questions (MCQs) were not administered for lesson 1. Surveys had open-ended responses for "strengths and limits of the lesson" to minimize biases in student feedback on the classes. Survey content validity was evaluated by face value evaluated by researchers and reliability was evaluated through an intraclass correlation coefficient (ICC).

Analysis

There were two main quantitative analyses: one that assessed student's learning with the MCQ questions (knowledge assessment), and one that gauged students' learning through self-assessments (perceived confidence). Utilizing histogram, we identified that both sets of data were non-parametric. Since we used ordinal data, we used a Wilcoxon signed-rank test to assess student performance on each lesson and included effect sizes (matched pair rank-biserial correlation(r_x)) as well as significance. For rank-biserial correlation effect size, r_x= 0.1 is a small effect, r_x= 0.3 is a moderate effect, and r_x= 0.5 is a large effect. With perceived confidence analyses, each student was a subject, and each student/subject's paired data was their averaged confidence on objectives before and after the lesson. With the knowledge assessment questions, each student/subject's paired data was their average percentage performance (out of 100%) on the MCQ questions before and after the lesson. The statistical analyses in this study were conducted using scipy.stats

version 1.7.1 on Python version 3.9.7. The statistical significance for all analyses in this study was expressed as a p-value less than 0.05 on two-tailed tests.

RESULTS.

Needs Assessment

A total of 32 respondents completed the needs assessment survey. 84% of responses indicated that cognitive techniques would be “very beneficial” to the youth they served. Among the free responses received in the needs assessment, “trauma processing”, “field trips”, and “self-control/regulation” were some of the top requested mental health concepts that organizations wanted to be included in the curriculum. To increase attendance of the sessions, “[hosting] on-site/at community center” lessons, providing “virtual meetings”, and “[providing] incentives” were suggested strategies.

Quantitative Results

There were 8-10 participants for each lesson. 31 of the 37 pre and post survey were complete for the perceived confidence questions, and 23 of the 37 pre and post survey were completed for the knowledge-based questions. There were logistical issues so none of the students in lesson 1 completed the knowledge-based questions. For perceived confidence questions, there was a statistically significant average increase in perceived confidence on lesson objectives for each session: fundamentals of mental health ($p = 0.008$, $r_x = 0.16$); the stress response, box breathing, and perceiving stress ($p = 0.046$, $r_x = 0.14$); coping skills and how to get help ($p = 0.025$, $r_x = 0.13$); and communication styles and conflict resolution strategies ($p = 0.031$, $r_x = 0.29$) (Figure 1). Similar results were seen in the increases in the percent-correct for the MCQs for each lesson, but only one was statistically significant: lesson of stress response, box breathing, and perceiving stress ($p=0.157$); lesson of coping skills and how to get help ($p=0.042$, $r_x = 0.11$); lesson of communication styles and conflict resolution strategies ($p=0.581$) (Figure 2).

Qualitative Results

Students and administrators provided free-response feedback on lesson strengths and areas for improvement (Table 1). Students praised the instructional approach, increased understanding of mental health knowledge, and new ways to cope with stress. Administrators gave student anecdotes about how the students have benefitted from the mental health curriculum and praised the curriculum adaptability. The feedback was then grouped into themes and a frequency thematic analysis was done, ranking the frequently prevalent themes (Table 2).

DISCUSSION.

Our study highlights the success of a local academic-community partnership focused on developing and evaluating a short-term mental health curriculum tailored for minority youth. The results indicate that the curriculum was largely effective in enhancing students' perceived confidence across all mental health learning objectives, with significant improvements observed across all four lessons. However, only one lesson showed a significant increase in knowledge assessment scores, a limitation likely attributable to the study's limited power and small sample size. While the quantitative data provided a strong baseline, qualitative feedback from participants further enriched our understanding. Students detailed specific learning experiences and expressed appreciation for culturally relevant content, which was not entirely captured in the structured assessment.

Our findings align with existing literature on short-term mental health interventions. School-based curricula have been shown to improve mental health literacy and reduce stigma among high school students[10]. Brief, resilience-focused programs have similarly demonstrated significant improvements in psychological well-being among adolescents[11]. Structured curricula can have a meaningful impact even without extended follow-up, emphasizing the relevance of our approach in school-based settings[12]. Additionally, evidence from the Early Intervention Foundation highlights that culturally tailored, school-based interventions, such as those incorporating social and emotional learning, can effectively support adolescent mental health including minority youth[13]. This emphasizes the benefit of content resonating with participants' lived experience[13]. While studies suggest that extending the duration of mental health programs can enhance a sense of community and strengthen mental health skills, longer interventions often face challenges such as attrition and limited resources, making short-term approaches both practical and impactful[14].

A key strength of our intervention is the academic-community collaboration, which significantly facilitated implementation and engagement. Such partnerships have been found to yield benefits, including resource advocacy, program development, and comprehensive community health assessments[15]. By fostering shared ownership, these collaborations can result in more sustainable and culturally sensitive interventions[15]. Our curriculum was designed to reflect the students' identities and experiences by incorporating diverse imagery and resources tailored to various needs, such as support for Spanish-speaking and LGBTQIA+ populations. Additionally, having medical student instructors from Mental Health Matters created a more inviting

atmosphere, encouraging open dialogue. The curriculum's flexibility also allows it to be delivered effectively by non-mental health professionals, making it adaptable for diverse educational contexts.

Despite the promising outcomes, our study is not without limitations. The absence of a control group makes it challenging to definitively attribute observed changes to the curriculum. Additionally, potential variability in lesson completion rates could have influenced the results. Furthermore, only one of the lessons produced significant knowledge gains, possibly due to differences in lesson complexity or engagement. Future studies should investigate these discrepancies to optimize the curriculum. The small sample size and lack of long-term follow-up also limit the generalizability of our findings. As such, future research should incorporate larger, more diverse samples and explore methods for sustaining mental health gains over time, such as digital follow-up tools or booster sessions. Improved community collaboration could facilitate more extensive tracking and better support for participants.

In conclusion, while our short-term curriculum provides a valuable model for engaging minority youth in mental health education, addressing these limitations in future iterations will enhance its effectiveness and broader applicability.

New Contribution to the Literature

This paper describes an academic-community partnership that led to the development and implementation of a mental health curriculum. Findings suggest that a longitudinal four-session curriculum can improve mental health knowledge and coping skills among minority youth in an urban, metropolitan area.

SUMMARY - ACCELERATING TRANSLATION

Title: Development and Evaluation of a Pilot Short-Term Mental Health Curriculum with Longitudinal Evaluation for Minority Youth.

Minority youth are at increased risk for mental health issues in the United States. Early intervention with mental health curriculum has been shown to help build resilience and wellness. Our aim was to develop and implement a mental health curriculum for minority youth. Our method consisted of a needs assessment for marginalized youth in our community. The needs assessment identified need for youth training in emotional regulation and insight, and interpersonal communication. We then developed a short-term mental health curriculum with a local community partnership, Vickery Meadow Youth Development Foundation (VMYDF). With the academic community partnership, we implemented the curriculum in an after-school program for minority youth. We evaluated our results using a pre-survey and post-survey. Quantitative feedback showed improved in perceived confidence and knowledge of mental health topics. These mental health topics included fundamentals of mental health; stress response; coping skills; and communication styles/conflict resolution strategies. Qualitative feedback highlighted strengths of the adaptability and practicality of the curriculum. Overall, we successfully developed a pilot mental health curriculum based on a community needs assessment for minority youth.

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FIGURES AND TABLES.

Figure 1. Perceived Confidence Levels Before and After Each Mental Health Lessons. Box plots depicting average student perceived confidence (scaled from 0 - 5 ("0" indicating no awareness/understanding, "5" indicating full awareness/understanding)) before and after the lesson [n= 9, 7, 9, and 6 for Lessons 1, 2, 3, and 4]. Each data point corresponds to the average perceived confidence for all of the lesson's objectives of a specific student. Standard error bars are included in red.

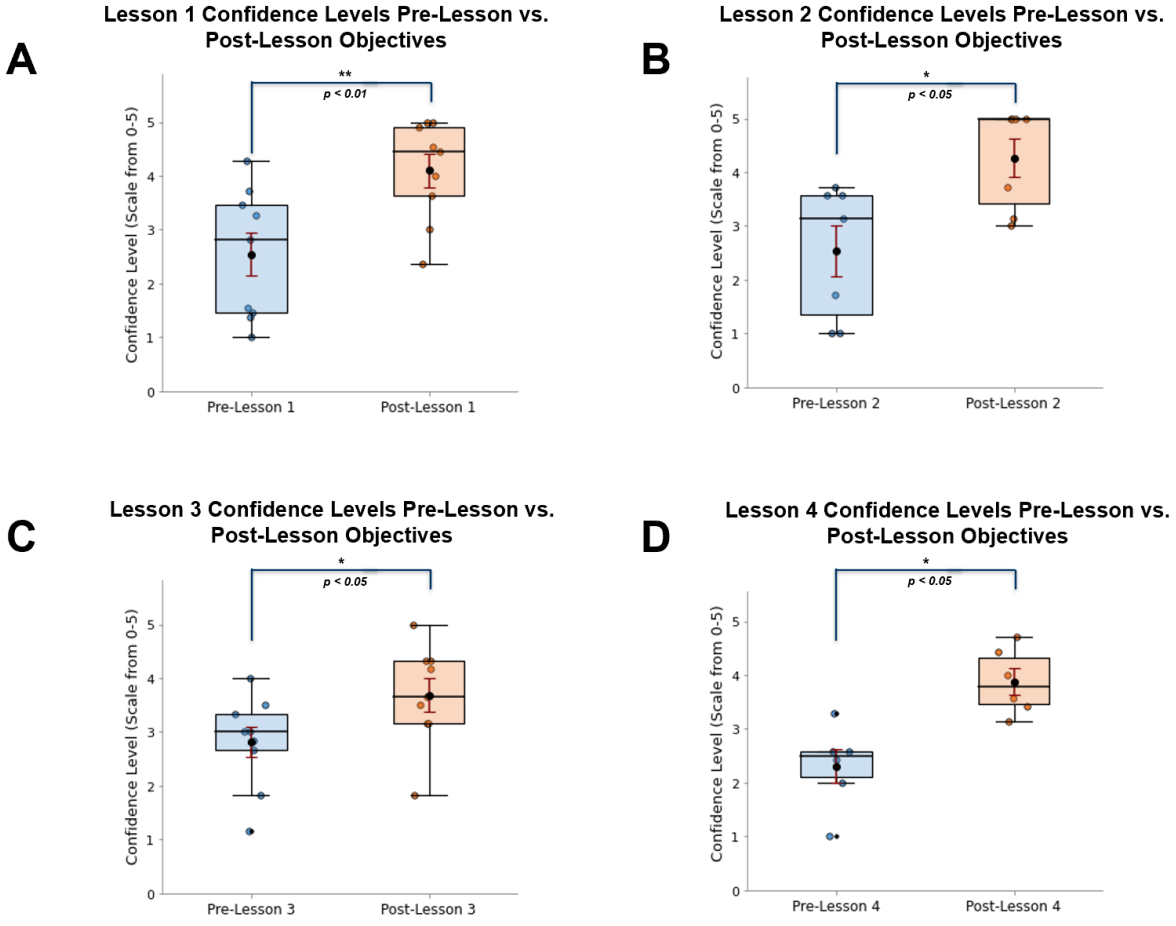
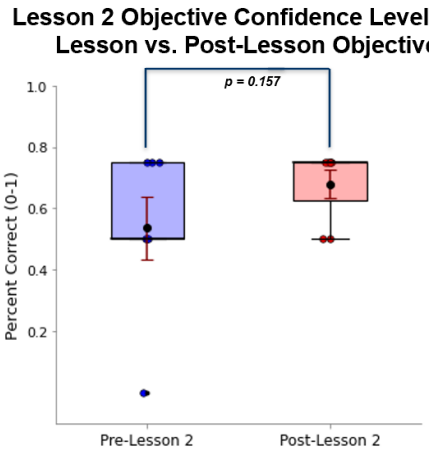
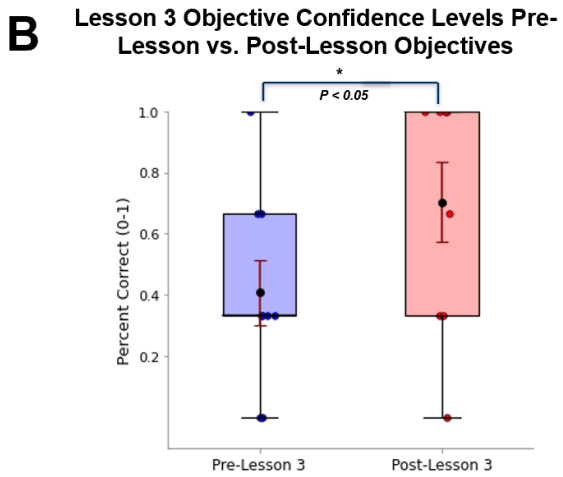


Figure 2. Knowledge Assessment Performance Before and After Each Mental Health Lessons. Box plots depicting average multiple choice student scores (scaled from 0 - 1 ("0" indicating 0% of the students got the question right, "1" indicating 100% of the students got the question right)) before and after the lesson [n= 7, 8, and 7 for Lessons 2, 3, and 4]. Each data point corresponds to the average percent correct from all the

multiple-choice questions of the lesson of a specific student. No Pre-Lesson MCQs were administered for Lesson 1. Standard error bars are included in red.





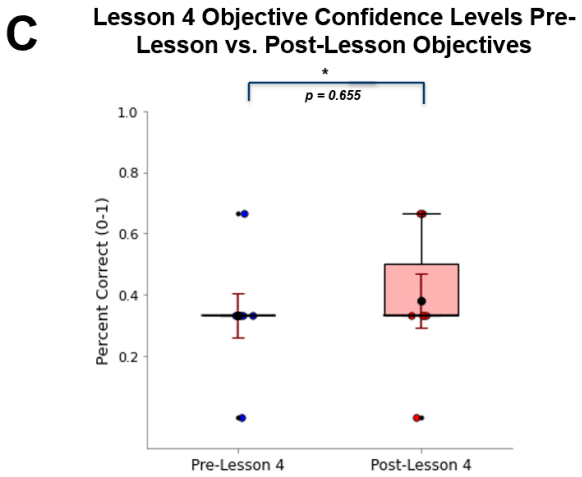


Table 1. **Qualitative Feedback of the Mental Health Curriculum.** Representative quotations for each theme of feedback received from students and administrators.

Theme	Representative Quotation(s)
Student Feedback	
Instructional Approach	- "Great explanation"
	- "I like how it was interactive and hands-on"
	- "This lesson is fabulous"
Mental Health Knowledge	- "I [learned] more about mental health"
	- "Self-control and support can help a [stressed] person"
	- "What mental health means"
Gained Skills	- "If you are [stressed], call someone or the number [they gave us] and do some yoga"
	- "Try new coping mechanisms that [students] may not have thought about or that they didn't think they'd like, for example yoga"
	- "To be able to handle stress or to reach out when feeling suicidal"
	- "Cope with stressors"
	- "Relaxing and [communicating]"
Constructive Feedback	- "Maybe [the lesson could be] longer"
	- "[Show] video and more games"
Administrator Feedback	
Student Anecdotes	- "A Scholar mentioned that they used to journal to relieve stress/work through personal experiences and that one session in particular allowed them to reconnect with this important coping tool for them. They continued to journal outside of this session."
	- "Another scholar mentioned that in his family mental health wasn't discussed at all. A major tragedy had struck their family, and family members were essentially minimizing the event in order to survive the grief they were all experiencing. The session allowed the Scholar to make connections to the importance of expressing what they are going through and provided the Scholar with relevant terminology and discussions."
Constructive Feedback	- "Addressing how to take care of one's self when living in a joint family or in a home with many members, lots of noise, and very little personal space."

	- "More culturally relevant practices could be incorporated and activities/thought exercises that put the Scholar's voice at the forefront of the learning experience."
Curriculum Adaptability	- "I think it's a great foundation that is buildable and can be adapted to different settings and community needs."

Table 2. Qualitative Thematic Analysis of Mental Health Curriculum. Representation quotations group by themes and ranked most frequently to least frequently.

Themes of Feedback	% Prevalence of Theme in Feedback
Student Feedback	
Mental Health Awareness	41%
Stress Coping Strategies	35%
Communication and Support	23%
Administrator Feedback	
Mental Health Awareness	28%
Stress Coping Strategies	20%
Environment and Support	20%
Cultural Relevance of Lessons	16%
Generalizability	16%