

The Youth Collaborative Mental Health Survey: A Community-Based Participatory Research Approach Using Constructivism With Majority Hispanic Youth

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Abstract

Youth today face novel mental health challenges compared to youth of previous generations. Youth voice in research is necessary to better understand and alleviate this national youth mental health crisis, but current U.S. nationally representative datasets on youth mental health lack youth voice in their survey designs. The academic team collaborated with 19 high school students to design a comprehensive youth mental health survey called the Youth Collaborative Mental Health Survey (YCMHS). The youth co-investigators represented the diversity of San Antonio, Texas, and were majority Hispanic. The constructivism pedagogy in education, which empowers youth voice in the learning process, was utilized to facilitate the youth-led creation of the YCMHS. During eight 2-hour meetings, the youth co-investigators designed the YCMHS with 20 domains and 195 questions. The YCMHS embraced respondent flexibility and voice and included 42 conditional response questions and 29 free-text response questions. The youth co-investigators led the survey administration at five schools during the 2020–2021 school year. The youth-led research design also strengthened collaboration between community and school partners. Takeaways from the academic team include the importance of being flexible and patient and advocating for the youth collaborators. Takeaways from the youth co-investigators include the importance of being open-minded, asking honest questions related to youth mental health, and being persistent. Future work will strengthen the scientific rigor of the YCMHS and highlight preliminary survey results.

In October 2021, the American Academy of Child and Adolescent Psychiatry, the American Academy of Pediatrics, and the Children's Hospital Association declared a national emergency in children's mental health (American Academy of Pediatrics, 2021). Several months later, the U.S. Surgeon General followed suit and issued a Surgeon General's Advisory on the urgent need to address the ongoing youth mental health crisis (Murthy, 2021). In the last decade, rates of youth mental health challenges such as depression, anxiety, and suicide have dramatically worsened (Pitchforth et al., 2019). The consequences of mental illness have disproportionate outcomes on youth of color, such as Black Americans and Native Americans (Ramchand et al., 2021). The effects of mental illness often follow youth into adulthood, with adults who experienced mental illness as young people demonstrating significantly elevated risks of health, legal, financial, or social problems (Copeland et al., 2015). Sources of mental health

burdens in youth are vast, including school-related stress, familial challenges, and social media misuse as significant contributors (Boers et al., 2019; Marraccini et al., 2021). Additionally, distressing events including climate change, school shootings, and the COVID-19 pandemic have worsened children's mental health (Kelly, 2017; Mayne et al., 2021; Rossin-Slater et al., 2020). Along with these increasing challenges, youth also face many barriers to accessing mental health services, such as financial difficulties, logistical barriers, provider unavailability, and social stigma (Radez et al., 2021).

Today's generation of youth face novel mental health challenges compared to previous generations. For example, the expanding integration of technology in the lives of children can have both healthy and unhealthy consequences. In the classroom, advances in technology have promoted student motivation, engagement, collaboration, and confidence in learning (Costley,

2014). However, increased use of the social media platforms Instagram and TikTok has been associated with body dissatisfaction and lower self-esteem (Mink & Szymanski, 2022; Vall-Roqué et al., 2021). Despite the mental health concerns associated with excessive internet and social media usage in youth, understanding and regulating these technologies has been challenging (Bromell, 2022). Adults may not adequately understand youth technology habits, as youth largely use separate online platforms or use online platforms differently than adults do (Vogels et al., 2022).

While nationally representative databases of adult mental health are frequently utilized in secondary data analysis to better understand mental health, comprehensive assessment of youth mental health is missing from the U.S. national repertoire of youth health data. As of this writing, the Children's Mental Health webpage of the Centers for Disease Control and Prevention (CDC) highlighted thirteen national surveys and databases with some youth mental health outcomes; however, none are solely focused on youth mental health (CDC, 2022). Additionally, youth voice is not mentioned in these survey methodologies.

Community-based participatory research (CBPR), which directly engages stakeholders in all phases of research, is a powerful tool in bypassing the traditional "academic ivory tower" approach to research and instead relies on stakeholder expertise to explore and address community needs (MacKinnon, 2018). CBPR originally emerged from principles of action research by Kurt Lewin in the 1940s (Lewin, 1948) and has since been extensively used in local and global settings to empower communities through research (Hall et al., 2015). CBPR has been shown to increase the quality and relevance of research data and can build continued community relationships for sustained impact (Winterbauer et al., 2016). CBPR has primarily been conducted with underserved communities, including racial and ethnic minority groups, to address health disparities that affect these communities (Israel et al., 2010). The equal inclusion of stakeholder voices in research collaboration is a crucial component of CBPR. When CBPR is used with the intention to equalize power, it can be a powerful tool for anti-racism (Collins et al., 2018). Additionally, racial and ethnic minority groups are frequently underrepresented in biomedical research, contributing to disproportionate and/or misleading understandings of the health of these communities (Brown et al., 2014; Oh et al.,

2015). Recruiting project collaborators directly from a community embraces diversity in research by shifting the research narrative toward the unique community identity. However, CBPR is not commonly represented in the literature, partly due to the time and resource commitments necessary to collaborate with communities as well as researchers' unfamiliarity with collaborative consensus decision-making (Blumenthal, 2011). Additionally, due to research design and funding limitations, project topics may not come directly from community-identified needs (Flicker, 2008). CBPR with youth is particularly challenging due to age-class-education hierarchical imbalances, developmental capacities, and limited decision-making experience (Merves et al., 2015; Winterbauer et al., 2016).

Youth participatory action research (YPAR) is a well-described method of youth CBPR initially designed to build secondary schools' capacity to address students' health and developmental needs (Ozer et al., 2008; 2010). In their initial work, Ozer et al. (2008) collaborated with students and teachers in two urban high schools in San Francisco. The student stakeholders identified areas of potential improvement in their schools, including unappetizing school lunches and the dress code policy, and they sought to enact policy changes to remedy these issues. More recent work utilizing YPAR has sought to empower youth to investigate issues in health equity and use their research to advocate for change (Kim, 2019; Ozer et al., 2020). In the HERMOSA study, 15 youth in a small Hispanic-predominant city investigated endocrine-disrupting chemicals in the personal care products used by Latina adolescents (Madrigal et al., 2016). The community-academic team recruited 100 Latina girls in their community, analyzed urine samples for potentially endocrine-disrupting chemicals, and educated participants on reducing their exposure (Harley et al., 2016). The authors of the HERMOSA study cited challenges central to collaborating with youth in research, including difficulties developing youths' critical thinking and leadership skills through the use of CBPR (Madrigal et al., 2016). For readers wishing to learn more about YPAR, Anyon et al. (2018) and Branquinho et al. (2020) systematically characterized YPAR methods, outcomes, and recommendations.

To address these challenges in conducting CBPR with youth, principles in educational

pedagogy may be borrowed that foster critical thinking skills, neutralize power differentials, and authentically enhance youth voice in research collaborations. Traditionally in education, the teacher is the carrier of knowledge, and the students are the consumers. However, teaching styles have begun to flip the classroom model to empower students in the learning process. The constructivist teaching pedagogy recognizes that learning occurs when students are actively involved in the learning process, particularly when they are encouraged to understand what they know and do not know, process and incorporate new knowledge, and disseminate their newly constructed knowledge (Baviskar et al., 2009). The theoretical principles of constructivism state that learners form knowledge through interconnected “constructs” of information (Lorsbach & Tobin, 1993). When learners encounter gaps in their “constructs,” they become intrinsically motivated to bridge the gaps (Sewell, 2002). As learners investigate and apply the novel information into practice, the connections between changed “constructs” are reinforced while promoting student motivation and interest in the topic. Facilitators must predict the knowledge gaps and design contexts (e.g., pose questions, create worksheets, facilitate discussions, prepare laboratory experiments) to assist learners in their active learning process. In this way, learners retain authenticity in their learning process while learning key knowledge and skills.

The constructivist paradigm was naturally adapted to the science classroom due to its utility in student-driven investigations of scientific phenomena. Using the constructivist process, science teachers pose interesting questions related to scientific phenomena, elicit student prior knowledge, and identify misconceptions. Students investigate scientific phenomena by conducting experiments, engaging in activities, and reading resources. To cement the knowledge, students apply their learned knowledge in discussions, presentations, and models. The constructivism pedagogy in the science classroom has been shown to improve student engagement, motivation, and performance (Ahmad et al., 2015).

Amid the constantly changing mental health landscape, youth voice is necessary in the research process to thoroughly understand youth mental health needs. In a recent *New York Times* article on teenage internet misuse, when youth were asked how adults can be of help, one participant answered, “We can’t expect adults to have a solution if they don’t know the problem” (The Learning Network, 2022).

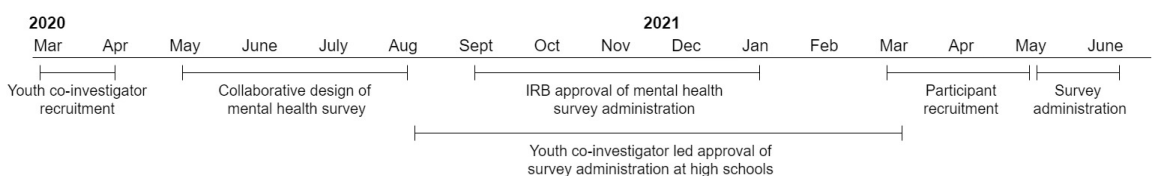
In this article, we detail a CBPR initiative with mostly Hispanic high school students in San Antonio, Texas, that used constructivist pedagogy to empower stakeholder voice in the preliminary design and administration of a comprehensive mental health survey, called the Youth Collaborative Mental Health Survey (YCMHS). This manuscript also aims to document a unique constructivist-based CBPR methodology with youth in the hope of guiding CBPR practitioners interested in collaborating with youth and/or investigating youth mental health. We end with lessons learned and takeaways from both the academic team and the youth co-investigators.

Methods

Community Partnership

The YCMHS was designed and administered by a community-academic partnership consisting of 19 San Antonio, Texas, high school students; three community leaders in youth health, forming the Community Advisory Board (CAB); and the academic research team. Figure 1 shows a timeline from initial collaboration to survey administration. High school students were recruited from the Youth Leadership Council (YLC), an extracurricular health education program for high school students across San Antonio facilitated by the University of Texas Health Science Center at San Antonio (UTHSCSA). The YLC was originally formed to recruit adolescents representing all regions of the city to promote adolescent sexual health through community partnerships. In more recent years, youth in the YLC have begun to incorporate more mental health projects in their work. YLC members have also engaged in monthly mentoring with UT Health San Antonio medical students.

Figure 1. Collaborative Survey Design and Survey Administration Timeline



The collaboration at the heart of this project began during one of the YLC mentoring events with a discussion between the principal investigator (a medical student mentor) and several YLC members about challenges in school-related mental health. The principal investigator, a YLC member (coauthor JN) and the academic team wrote and received a grant for community-based research in February 2020, which funded this work.

From March to April 2020, project recruitment was presented to the four YLC groups, each representing a distinct geographic zone (North, South, East, West) in San Antonio. Interested members submitted an application that described their interest in the project and shared ideas to support youth mental health. The CAB and two members of the research team reviewed and selected from the applications, with the goal of recruiting at least two members from each geographical zone for a minimum of eight youth. Nineteen youth were ultimately selected and are referred to as “youth co-investigators” in this article. Aligning with CBPR principles, youth co-investigators acted as shared decision-makers and participated in all phases of the research project, including project design, survey creation, survey administration, data analysis, result interpretation, manuscript editing, and project dissemination (Wallerstein et al., 2017). Youth co-investigators were each compensated \$150 for their work in the design of the survey.

The diverse community-academic partnership included the CAB, which consisted of a college professor with a background in trauma-informed care, an adolescent program project manager with a background in law and nursing, and the deputy chief of mental health services for a juvenile probation department. Members of the CAB had been involved in other community-based projects associated with the YLC and the academic team in the past. They were invited to participate in this project due to their expertise in youth mental health and youth-engaged projects. The principal investigator has a Master of Arts in teaching and a secondary science educator license. Senior academic advisers included an obstetrician-gynecologist with expertise in trauma-informed care and a child and adolescent, forensic, and adult psychiatrist. Despite the diverse professional roles of the CAB and academic team, the teams shared a common goal of empowering local youth to lead the investigation on identifying mental health challenges. The teams’ shared expertise facilitated a trauma-informed, youth-driven, pedagogy-

derived, and expert development of the mental health survey. The academic center’s institutional review board (IRB) determined the CBPR survey design process to be not regulated research (HSC20200256N).

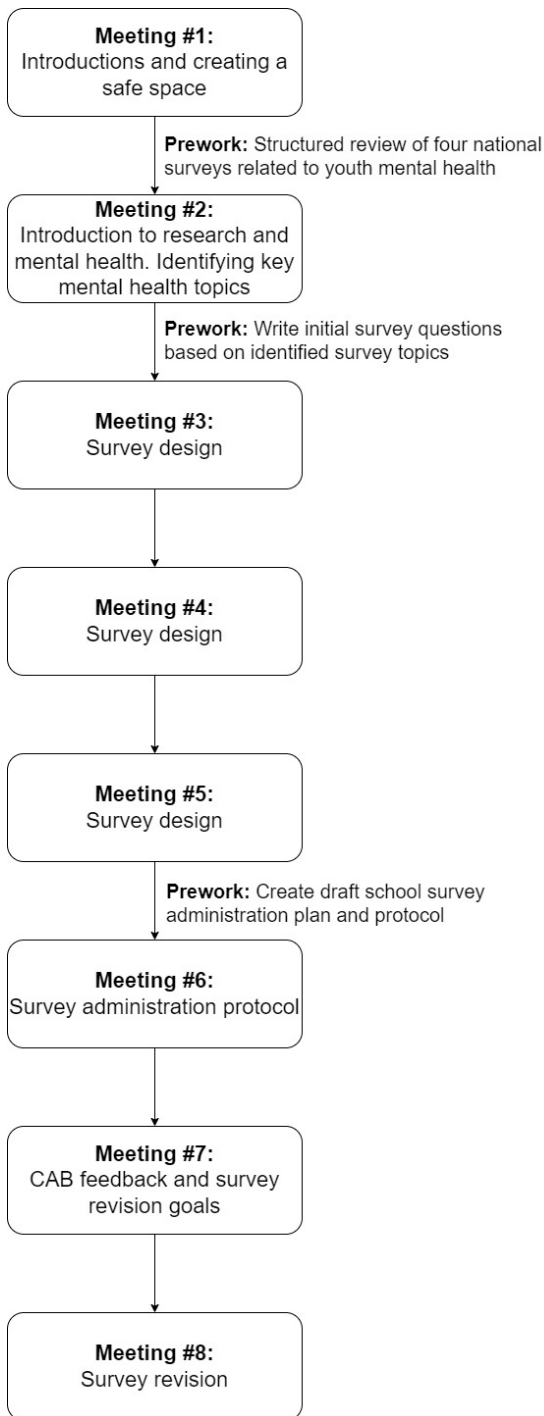
Survey Design

From May to August 2020, the youth co-investigators and academic team met every other week for a total of eight 2-hour virtual meetings to design the YCMHS and plan the survey administration protocol. The facilitators created lesson plans that guided the structure of each meeting. A PowerPoint presentation accompanied each lesson plan to facilitate the meeting. A basic lesson plan included an activity, the teacher’s actions during the activity, the students’ projected actions during the activity, and the estimated time needed to complete the activity. A sample lesson plan can be found in the Appendix. Constructivist lesson plans were flexible, and it was expected that they would adapt as the work evolved (Driver & Oldham, 1986). The constructivist approach to designing the lesson plans focused on establishing youth co-investigator expertise and advancing youth voice toward tangible objectives (Iqbal et al., 2021). For example, guiding questions were prepared to facilitate, but not lead, discussions. Tools to share control of virtual activities were incorporated to promote youth ownership of the work. Figure 2 illustrates the topics covered in each meeting.

The first meeting began with introductions, team relationship-building activities, and a project overview. Afterward, the research team discussed and signed an “investigator contract” with 11 collectively defined commitments and values to be upheld throughout the project, such as “upholding confidentiality to any personal details shared in our meetings” and “actively listen[ing]” (Michener et al., 2012). As prework for the second meeting, youth co-investigators completed a worksheet-guided review of four federally funded, nationally representative surveys with domains in youth mental health (Youth Risk Behavior Surveillance System Survey, The National Survey of Children’s Health, National Interview Survey–Child, and National Survey on Drug Use and Health).

The second meeting began with an introduction by the CAB, who shared encouragement and advice, followed by a short lecture introducing research. The youth co-investigators then engaged in a question-based, youth-led, researcher-facilitated discussion (Socratic seminar) about

Figure 2. Survey Design Meeting Objectives



mental health to elicit youth co-investigators' prior knowledge and attitudes on collectively identified key mental health topics. Socratic seminar is an education technique that facilitates scientific inquiry through discussion (Chowning, 2009). It encourages participants to be reflective, inquisitive, and analytical in their thinking and responding.

Discussion leaders respond to participant questions with tiers of guided questions (e.g., literal, interpretive, and evaluative questions) to further facilitate the discussion. Planned guiding questions included: What is mental health? What is it not? What factors influence mental health? and Why is there stigma around mental health? Youth co-investigators then engaged in a facilitated discussion about the four prework surveys and shared their likes and dislikes about the surveys. During the second half of the meeting, youth co-investigators synthesized the discussions about mental health and the national surveys to identify mental health topics that should be investigated. Drawing from this work, they created an initial list of 29 survey domains for the YCMHS.

As prework for the third meeting, youth co-investigators selected at least seven of the 29 domains and wrote at least three survey questions for each domain. During the third, fourth, and fifth meetings, the co-investigators collectively reviewed and revised the questions. By the end of the fifth meeting, the co-investigators had submitted the first draft of the YCMHS, with 28 domains and 236 questions, to the CAB and academic advisers for expert review. Prior to the sixth meeting, youth co-investigators completed a structured prework worksheet to plan for pursuing approval to administer the survey at their respective high schools. Youth co-investigators peer-reviewed each other's plans and finalized them in the sixth meeting.

In the first half of the seventh meeting, the CAB provided feedback on the YCMHS. In the second half of the meeting, the youth co-investigators came up with survey revision goals based on the feedback. In the eighth and final meeting, the youth co-investigators revised the survey based on their revision goals and CAB feedback. The final meeting concluded with action items for the upcoming 2020–2021 school year. The youth co-investigators' action items were to meet with their school administrators to receive approval to administer the survey. The academic teams' action items were to receive IRB approval and support the youths' efforts in obtaining school approval.

The survey administration protocol was submitted to the IRB as human research with vulnerable populations (children). Due to the sensitive nature of the project, the IRB consulted the Safety and Ethics committee. Over the span of 4 months, the survey and administration protocol were revised by the academic research team, the IRB, and the CAB. The survey administration

Table 1. Youth Co-Investigator, Academic Team, and Community Advisory Board Project Involvement

Phase	Academic team	Community Advisory Board (CAB)	Youth co-investigators
Youth co-investigator recruitment	Designed application; reviewed applications; selected youth co-investigators	Reviewed applications; selected youth co-investigators	Completed application
Survey design and administration meetings	Created meeting lesson plans, presentations, prework, and worksheets; facilitated meetings and discussions; facilitated design of survey; compiled survey questions into survey platform	Presented introduction to youth mental health challenges; reviewed initial survey; provided feedback on initial survey	Created "collaborator contract"; completed worksheet-guided investigation of four national youth health surveys; created survey domains; wrote and revised survey questions for initial draft; revised survey based on CAB feedback; designed school approval plan; designed survey administration protocol
Survey administration	Assisted in school administration meetings; submitted project to institutional review board; administered survey	Assisted in institutional review board submission and revision	Met with school administrators to discuss project; completed school project approval requirements; created and deployed survey recruitment strategies

protocol and the analytical plan received IRB approval in January 2021 (HSC20200837H). An IRB addendum was approved for each school that participated due to the slight variations in survey administration protocol.

School Collaboration and Survey Administration

Youth co-investigators represented 10 different high schools, which were considered potential survey sites. Between August 2020 and March 2021, the youth co-investigators led efforts with their respective school administrators for the approval and administration of the survey. Youth co-investigators prepared presentations and met with principals, counselors, and superintendents. Two schools required the submission of an external research application. Five of the 10 schools agreed to collaborate. Any high school student enrolled at a partnering school was eligible to complete the survey by convenience and voluntary response sampling. Participant recruitment occurred

from March to May 2021. Survey recruitment strategies were primarily organized by the youth co-investigators and school partners and included school flyers, social media, intercom announcements, lunch table recruitment, class announcements, and online messaging systems. Students interested in participating completed an interest form that included pertinent study details. Participants who were aged 18 or older consented to participate, and participants under 18 years old assented with parent/guardian consent.

The survey was administered on select school days via Zoom Video Webinar (San Jose, CA) from May to June 2021. The principal investigator and a licensed mental health professional facilitated the survey administration. An hour was scheduled for each session; however, more time was granted as needed. Several trauma-informed measures were implemented to minimize triggering symptoms during the survey. Before starting the survey, the facilitator guided participants through the creation

Table 2. Youth Co-Investigator Demographics

Characteristics	n	%
Age		
16	7	36.8
17	9	47.4
18	3	15.8
Gender		
Female	11	57.9
Male	8	42.1
Race/Ethnicity		
White, Hispanic	13	68.4
White, not Hispanic	2	10.5
Black	2	10.5
Asian American	2	10.5
Biracial	4	21.1
Grade		
10th	7	36.8
11th	9	47.4
12th	3	15.8
School type		
Public	16	84.2
Private religious	2	10.5
Charter	1	5.3

of a safety plan to manage any emotional discomfort felt during the survey. The facilitator explained that responses were voluntary and anonymous, reviewed mental health “triggers,” and noted that a mental health professional was available during the survey. Text embedded into the survey also explained these safety measures. Safety statements were included prior to the start of the “Suicide” and “Risky Behavior” domains. At the end of the survey, participants received a curated list of national and local mental health support organizations and hotlines. Participants could privately message the survey facilitator or mental health professional or request to have a one-on-one conversation with the mental health professional at any time. School counselors were informed about the study and the time of survey administration to help address any acute mental health episodes. Participants were compensated with a \$10 electronic gift card and 1 hour of community service credit. Table 1 details the involvement of the youth co-investigators, academic team, and CAB in each major phase of the project.

Results

Youth Co-Investigators

Twenty-six youth co-investigator applications were received, and 20 youth co-investigators were initially selected. One youth co-investigator discontinued after the first meeting due to scheduling conflicts. Table 2 highlights the demographic characteristics of the youth co-investigators. At their time of application, seven youth co-investigators were in 10th grade, nine were in 11th grade, and three were in 12th grade. Thirteen youth co-investigators identified as Hispanic, with four of the 13 considering themselves biracial. Two identified as non-Hispanic White, two identified as Black, and two identified as Asian American. Youth co-investigators attended 10 different high schools and represented 15 zip codes. Sixteen youth co-investigators attended public schools, two attended private religious schools, and one attended a public charter school.

The Youth Collaborative Mental Health Survey

The youth co-investigators initially selected 29 survey domains to cover pertinent mental health topics discussed during the second meeting. They were instructed to write at least three questions per domain for at least seven domains to review during the third meeting. The youth co-investigators selected 7.6 domains and wrote 25.3 questions each, on average, for a total of 481 questions. During the third, fourth, and fifth meetings, the youth co-investigators and academic team reviewed each question, decided whether to include the question, and revised included questions. By the end of the fifth meeting, one survey domain and 245 questions had been removed either due to duplications or group-determined irrelevance. The CAB reviewed this initial survey of 28 domains and 236 questions and recommended two primary goals for survey revision. First, shorten the length of the survey to an estimated 15-to-25-minute completion time. Second, keep answer choices consistent. In response to the feedback, the youth co-investigators shortened the survey to 20 survey domains and 198 questions and revised answer choices for consistency. During the IRB’s review of the survey, three additional questions were removed due to their sensitive nature. A total of 195 questions and 20 domains were on the approved YCMHS. Forty-two questions (22%) were conditional and only available if the preceding question was answered with a particular response. Twenty-nine questions (15%) used free-text responses. The full survey can be found in the article’s Supplemental File.

Table 3. Youth Collaborative Mental Health Survey Domains and Question Characteristics

Domains	Total questions	Conditional; Free-text response
Demographics and Background	11	1; 0
Racism	6	2; 2
Sexuality	12	5; 4
Environment	10	2; 0
Relationships	11	1; 1
School Performance	11	0; 2
Job/Extracurricular	8	2; 1
Physical Health	15	0; 1
Mental Health	14	2; 1
Pandemic	6	0; 2
Stress	4	0; 1
Depressed Mood	5	0; 0
Suicide	9	5; 1
Trauma	6	2; 0
Anxious Mood	6	0; 1
Coping Strategies	9	1; 2
Risky Behaviors	26	15; 4
Screen Time and Social Media	16	3; 1
Mental Health Education	5	1; 1
Survey Feedback	5	0; 4
Total	195	42; 29

While the complete list of survey domains can be found on Table 3, this section highlights several particularly important domains and questions. In alignment with the increasing national gravity of race and sexuality disparities with recent events including the murder of George Floyd and the Pulse nightclub shooting, the YCMHS included domains on Racism (six questions) and Sexuality (12 questions). It included five domains on mental health and associated symptoms (Mental Health, Stress, Depressed Mood, Suicide, and Anxious Mood). Ten domains covered mental health stressors (Racism, Sexuality, Environment, Relationships, School Performance, Job/Extracurricular, Pandemic, Trauma, Risky Behaviors, and Screen Time and Social Media). During the survey design process, the youth co-investigators highlighted the importance of physical health in supporting mental health and included 15 questions in the Physical Health domain. Importantly, the youth co-investigators discussed that schools do not provide enough services to support student mental health and

added a domain on school-based mental health services (Mental Health Education). Within the Screen Time and Social Media domain, the youth co-investigators highlighted the distinction between technology use for personal versus school activities. Additionally, in various domains throughout the survey, the youth co-investigators specified factors associated with mental health at home compared to mental health at school. In the Survey Feedback domain, the youth co-investigators intentionally incorporated youth vernacular to promote authenticity in receiving feedback (e.g., Q22.5 Are there any other mental health concerns you want to get off your chest?).

Survey Administration

Four of the five schools that agreed to participate in the study were in San Antonio. The remaining school was in a neighboring city. Three were public schools and two were private religious schools. The number of total students in each of the five schools ranged from 129 to 2,254. Across all five schools, 412 students

completed the survey interest form, 146 students completed the informed consent, and 120 participants completed the survey. The number of participants in each of the five schools ranged from 6 to 55. Survey recruitment strategies varied by school. Virtual recruitment strategies (e.g., posting on school social media, student emails) were used in all schools. In-person recruitment strategies (e.g., informational tables, flyers, school announcements) were used in the four schools that held in-person classes. One school required the youth co-investigator to create a 1-minute video about the survey to be presented in morning announcements. The survey was administered after school hours in four schools and during a homeroom/elective class in one school. There were no reported mental health trigger incidents during the survey administration.

Discussion

This project utilized the constructivist pedagogy in CBPR to empower youth co-investigator voice in the design of a comprehensive youth mental health survey. Aligning with constructivist principles, the youth co-investigators' mental health knowledge "constructs" were first elicited through facilitator discussions about mental health. Next, the youth co-investigators identified knowledge gaps and misconceptions and generated new knowledge by investigating nationally recognized youth mental health surveys. Youth co-investigators then applied their newly learned knowledge to design the YCMHS. Finally, the youth co-investigators went through several cycles of reflection to improve the survey, recruit survey participants, and discuss implications of the preliminary results. In addition to constructivism's designed purpose of active learning to acquire knowledge and skills, this youth-driven approach may be critical to better understanding the evolving mental health complexities of today's youth, which are evident in the YCMHS domains of Racism, Sexuality, Social Relationships, Screen Time, and Social Media.

The Youth Risk Behavior Survey (YRBS) and the National Survey of Children's Health (NSCH) are two nationally representative databases commonly used for secondary analysis of mental health-related topics among children. Like the YCMHS, the YRBS (89 questions) and NSCH (170 questions) are also questionnaire surveys. However, unlike the YCMHS, they do not include free-text response questions,

which allow respondents to provide important perspectives that may be difficult to capture with predefined response options. Similar to the YCMHS, the YRBS is administered directly to youth participants. The NSCH is administered to parents/guardians to respond for one child. The YRBS was designed to cover six topics, including behaviors that contribute to injury or violence, sexual behavior, alcohol and drug use, tobacco use, dietary behaviors, and physical activity (CDC, 2020). These domains are covered in the YCMHS, but the number and type of questions dealing with each topic differs. For example, the YRBS has five questions on suicidal behavior, while the YCMHS has nine questions, five of which are conditional and one of which is a free-text response. The NSCH was designed to explore children's physical and mental health, access to health care, family, neighborhood, school, and social context (Child and Adolescent Health Measurement Initiative, n.d.). Its domains also overlap with those of the YCMHS, but the number and type of questions differs in each. For example, the NSCH contains only one question each on depression and anxiety, while the YCMHS includes five and six questions, respectively.

In response to the pandemic, the CDC developed the one-time Adolescent Behaviors and Experiences Survey (ABES), a 110-item questionnaire to assess the six YRBS domains as well as six additional categories—risky behaviors, economic and food insecurity, parental abuse, mental health, school and social engagement, and telemedicine use—among youth across the United States (Rico et al., 2022). Similar to the YCMHS, the ABES was administered in the school setting and provided a more comprehensive evaluation of youth mental health and social and structural context than the YRBS or NSCH.

While the three national questionnaires discussed here share similar topics with the YCMHS, youth voice was not incorporated in their design. In contrast, the youth co-investigators valued participant voice in developing the YCMHS, highlighted by the survey's relatively high proportion of conditional response and free-text response questions (22% and 15%, respectively). Surveys that do not emphasize youth voice may face challenges in relating with youth, such as linguistic barriers and survey relevance (Barbieri, 2008).

Finally, it is important to note that the discussed national surveys have been psychometrically validated, while the YCMHS is in a developmental

phase and may change considerably during the validation process. Additionally, other agencies, such as local or state governments and nonprofit organizations, have created mental health surveys for youth for various purposes and communities.

Beyond the constructivist design of the YCMHS, CBPR collaborative principles enhanced the survey administration and data interpretation elements of the project. Youth co-investigators initiated and led the discussions with their school administrations to obtain project approval, which included submitting research proposals, presenting to school counselors and administrators, and, in one case, creating a video about the project for schoolwide dissemination. The stakeholder-led collaboration with schools was vital to the approval and implementation of the YCMHS. School administrators could better trust their students' motives for capturing and disseminating data compared to those of outside academicians without ties to the school communities (Holzer et al., 2014). Youth co-investigators attended the schools that the qualitative feedback was directed toward and had greater insight when interpreting this data.

Importantly, most youth co-investigators were Hispanic, reflecting the demographics of the majority-minority Hispanic ethnicity of San Antonio. Like other cultural groups, Hispanic communities have unique mental health challenges that mediate the understanding and treatment of mental illness (Ayón et al., 2010; Weller et al., 2008). Mental health stigma in Hispanic culture may lead to decreased levels of mental health literacy and utilization of mental health services (Benuto et al., 2019). Similar to how racial concordance in patient–physician or teacher–student relationships improves outcomes, we believe that the culturally representative design of the YCMHS better speaks to the largely Hispanic population of the study setting (Redding, 2019; Shen et al., 2018).

In this community-academic partnership, the youth co-investigators' expertise in youth mental health was paramount to the survey's design. The CAB and academic team were vital to the support and refining of the survey, the practicality of the survey administration, and the analysis and dissemination of the data. The CAB, which consisted of youth health experts, was especially helpful when revising the survey and its administration for IRB approval. While continuing to respect youth voice in the survey language, the CAB refined the questions to be

more scientifically rigorous. The CAB also made recommendations to trauma-inform the survey administration methodology to protect against potential mental health crises. In addition to facilitating the youth co-investigators and CAB, the academic team provided logistical, administrative, and financial support. The collaborative effort of the community-academic partnership utilized team strengths to work toward a shared mission (Baker et al., 2006).

Considerations for Practice

While constructivism in CBPR with youth can amplify youth voice, the implementation of constructivism must be carefully and intentionally designed. Youth voice should be authentic and compose a substantial component of the work. Superficial inclusion of youth voice, in contrast, would involve youth but not empower them as equal or leading contributors. For example, in our study, the youth co-investigators were empowered to take ownership of the survey design process, including the inclusion and exclusion of questions during survey revisions. It is important to note that youth collaborators do not have to be involved in all components of the work but should participate in the components that would benefit most from their expertise in light of the project's shared mission. In our project, the youth co-investigators were not involved in revising the survey to comply with IRB feedback due to the technical nature of that process, but they did review and discuss the final approved version of the survey.

Collaborators must be motivated to authentically engage in the work. In this project, intrinsically motivated youth co-investigators were selected through the application process, and monetary compensation acted as an additional extrinsic motivation. Readers interested in incorporating constructivism should ensure that the team has a strong culture toward shared goals to foster motivation; otherwise, engagement and authenticity may suffer. Constructivist facilitators should also recognize and acknowledge their power imbalance. Facilitators should not lead youth stakeholders toward the facilitators' goals but instead be genuine supporters of stakeholders' voices. In our case, we had two facilitators in each meeting to ensure that one facilitator did not commandeer the discussion. Our constructivist approach to scientific research may not be as scientifically rigorous as traditional research in part due to the limited experience and knowledge base of the youth. Like all research, it is important

to establish clear limitations on the results of youth-led investigations.

Challenges and Limitations

Our project has several notable challenges and limitations. First, construction of a new research instrument requires rigorous psychometric evaluation. The YCMHS was not reviewed by expert survey designers and should be evaluated for key characteristics such as validity and reliability. Second, youth co-investigators were selected from an existing adolescent health program, which biased the team toward highly motivated youth interested in public health and community engagement. Attempts to increase youth voice diversity, such as selecting at least two youth co-investigators from each of the four geographical zones, were implemented, but the project excluded the voices of youth without the means to participate in extracurricular programming. Third, half of the 10 schools chose not to participate in the project. In most cases, these schools did not provide a substantive reason for not participating. Interestingly, the private religious schools required less administrative approval compared to the public schools. Further understanding of school-based factors for discussing and addressing mental health will be needed for robust collaboration with schools in the future. Fourth, the project was initially designed prior to the start of the COVID-19 pandemic. The survey design and administration processes were intended to be conducted in person but were adjusted to the virtual environment. The virtual format added challenges in facilitating simultaneous and small-group discussions with the co-investigators, especially given the novelty of virtual meetings at that time. The impacts of the pandemic likely also contributed to the limited participation in our survey. Students were adapting to the changing virtual and hybrid learning policies at their schools and experienced “Zoom fatigue” by the end of the first COVID-19 school year, when the YCMHS was administered (Bullock et al., 2021). Fifth, no implementation data were collected on the use of the constructivist paradigm in CBPR. Youth co-investigators were intentionally not surveyed about the constructivism process to respect their being part of the research team and not research participants. Future work should evaluate the feasibility, acceptability, and effectiveness of constructivist approaches to CBPR in youth.

Takeaways and Lessons Learned From the Academic Team

1. Be authentic partners. Trust youth collaborators as the experts in challenges that affect their health and mental health. This will enhance the credibility of the work.
2. Be flexible and adaptable. Anticipate that the project may change as youth voice is integrated into the project. This may change the timeline or the required resources.
3. Be intentional. Utilize the academic team's strengths in finding and implementing evidence-based protocols, such as constructivism and problem-based learning, to facilitate teamwork and achieve project goals.
4. Be patient and have perseverance. Recognize that your local IRB or other oversight committees may be unfamiliar with CBPR and may be especially hesitant when working with youth who qualify as a vulnerable population in research. It will be important to both highlight the necessity of this methodology in research and note how risk is minimized.
5. Be advocates. Elevate and empower the youth collaborators' voice throughout the research process, especially when disseminating the work in presentations. Hearing about the work directly from the youth can be especially impactful to communities.

Takeaways and Lessons Learned from the Youth Co-Investigators

1. Be open-minded. Especially be aware of the various stressors that contribute to the fluctuation of youth mental health. Each environment has its own stressors that need to be considered when investigating student mental health.
2. Ask honest questions related to youth mental health. Our survey might have been the first time students have received real and raw questions concerning their mental health and well-being. Youth are open to sharing their hearts.
3. Emphasize self-care. Accomplishments and academic success are often prioritized before education about a healthy mental lifestyle. A student's mental health desperately needs to be cultivated consistently to allow future generations to break the chain of academic pressures.

4. Disrupt institutional mental health stigma. Some school districts do not understand that in order for students to cope with academic stress, they need professionals in mental health who can provide adequate support.
5. As Dory from *Finding Nemo* says, “Just keep swimming.” Difficulties will arise, but one should not give up when faced with trials and tribulations. Many will resist others’ desire to bring change to the great stigmas associated with mental health. My greatest takeaway would be to let passion, rather than discouragement, take control.

Conclusions

This manuscript reports the novel usage of the constructivist paradigm when collaborating with youth to design a comprehensive mental health survey for youth. We believe the constructivist design of the YCMHS, while preliminary, may be used to guide designs of other youth mental health surveys and youth collaborative projects. In our future work, we aim to characterize initial results from the YCMHS, strengthen the scientific rigor of the survey, and recruit more diverse voices to contribute to the survey. As our project evolves, we expect that some youth co-investigators may no longer be able to contribute to the work as they navigate their post-high school education and careers. We will strive to recruit comprehensive and representative youth voices to enrich our understanding of youth mental health challenges. We will continue the principles of CBPR and constructivism in involving youth co-investigators, both old and new, in future chapters of the project, including psychometric validation of the instrument.

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Competing Interests

The authors have no competing interests to declare.

Authors' Contributions

Phillip Yang was involved in conceptualization, methodology, formal analysis, investigation, data curation, writing original draft, writing review and editing, visualization, project administration, and funding acquisition. Bridget Sumner, Jolie Gomez, Gabriela Garza, Luz Alvarez, Vanessa Benn, Albert Wylie, Rubi Cordero, Omar Ratrut, Meghan Lim, Dylan Lim, Jazmeyne Evans, Richard Krol, Mya Galan, George Garza, and Laura Reilly-Sanchez were involved in investigation and writing review and editing. Jake Neill was involved in conceptualization, methodology, investigating, writing review and editing, and funding acquisition. Barbara-Robles-Ramamurthy was involved in writing review and editing and supervision. Jeannine Von Stultz, Jen Osborne, and Jennifer Todd were involved in investigation and writing review and editing. Kristen Plastino was involved in conceptualization, methodology, writing review and editing, supervision, project administration, and funding acquisition.

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Appendix

Meeting 1: Orientation – “Introductions and Creating a Safe Space”

Topic (estimated time)	Facilitator action	Student action
Introduction and ice breaker (15 minutes)	<ul style="list-style-type: none"> • Open orientation PowerPoint • Go over agenda • Ice breaker questions 	<ul style="list-style-type: none"> • Participate in ice breaker questions
Project overview (30 minutes)	<ul style="list-style-type: none"> • Discuss project goals • Discuss timeline: <ul style="list-style-type: none"> • Phase 1a: Design mental health survey • Phase 1b: Design survey administration protocol • Phase 2: Recruit participants for the survey in the next school year • Discuss payment and responsibilities 	<ul style="list-style-type: none"> • Discuss project goals • Ask clarifying questions
Professionalism contract (45 minutes)	<ul style="list-style-type: none"> • Facilitate construction of professionalism contract • Share contract on screen and add rules in real time • Discuss final contract before approving 	<ul style="list-style-type: none"> • Add values/rules to the contract • Sign professionalism contracts prior to the next meeting
Next meeting (15 minutes)	<ul style="list-style-type: none"> • Go over prework on worksheet-guided investigation of national surveys • Send poll for future meeting times 	<ul style="list-style-type: none"> • Ask clarifying questions • Share potential date conflicts