

Developing a School-Based Risk and Resilience Network to Implement the Youth Aware of Mental Health (YAM) Program with Texas Adolescents

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Research

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Abstract

Background

Despite the school setting presenting an ideal place to address youth depression and suicide prevention, there continues to be a need for innovative and effective school-based mental health interventions.

Methods

The University of Texas Southwestern Medical Center's Center for Depression Research and Clinical Care developed a collaborative school-based prevention effort, the Risk and Resilience Network (RRN), to develop and test approaches to aid in enhancing resiliency factors, prevention of depression and suicide, and improve early identification and care linkage for youth with depression and/or suicidality. The aims of RRN were: 1) to build collaborative partnerships with schools and youth-focused community organizations to study risk and resilience in youth, and 2) in collaboration with school partners and youth-focused community organizations, to engage school stakeholders and families in developing and testing innovative strategies for addressing depression and suicide prevention in schools. To engage schools in the RRN, a cornerstone, evidenced-based program was selected (Youth Aware of Mental Health, YAM, program) to offer to schools as part of an implementation project. This report uses the RE-AIM framework to describe the rationale, design, implementation process, and YAM program evaluation results from the initial years of a school-based network focused on depression and suicide prevention.

Results

Descriptive data are presented, using the RE-AIM framework, on the first three academic years of the RRN and YAM program partnerships (2016-2017, 2017-2018, and 2018-2019), which included 24 RRN partnerships. Eleven (73.3%) out of the 15 school systems who agreed to RRN partnerships agreed to implement the YAM program, resulting in 14,061 students who participated in YAM.

Conclusions

The RRN is a collaborative school-based prevention effort to develop and test approaches to aid in enhancing resiliency factors, preventing of depression and suicide, and improving early identification and care linkage for youth with depression and/or suicidality.

Trial Registration: Not applicable

Contributions To The Literature

- The implementation of social emotional learning programs, including those that address depression and suicide prevention in youth, are vital in efforts to address mental health in youth, but there continues to be a lack of evidence-based programming for schools to implement.

- We aimed to develop innovative strategies to address depression and suicide prevention by building collaborative partnerships with schools and youth-focused community organizations, using a deployment-focused approach to engage school stakeholders and families in developing research questions and testing strategies.
- We utilized the RE-AIM framework in the design, dissemination, and implementation process to develop a school-based network.

Introduction

Rates of suicide have increased by 178% and 76%, respectively, in youth aged 10-14 years and 15-19 years over the past decade (Curtin & Heron, 2019). In fact, suicide is the 2nd leading cause for death in adolescents in the US, with more than 1900 adolescents dying by suicide in the US in 2016 (CDC, 2017). In 2019, 8.9% of high school-aged students reported they had attempted suicide in the year prior, and 2.5% required medical attention for a suicide attempt (Ivey-Stephenson et al., 2020). With the growing numbers, suicide prevention has gained national attention and funding has grown (NIMH, 2016). Depression is among the key risk factors for suicide and suicide attempts. In 2017, over 13% of adolescents (ages 12-17 years) had a major depressive episode, yet less than 40% of these youth received treatment (NIMH, 2019).

What is the problem?

While there is clear evidence of increased suicide rates among our nation's youth, there continues to be no definitive treatment for suicidal behaviors, and prevention efforts are inconsistent. Although widely used, suicide prevention efforts have not resulted in significant declines in suicide rates. In fact, a recent CDC report focused on this age group highlighted that after a stable trend in suicide rates from 2000 to 2007, the rate sharply increased from 2007 (6.8 per 100,000 persons) to 2017 (10.6 per 100,000 persons; Curtin et al., 2019). School-based depression prevention programs have gained in popularity recently, given state and federal funding increases related to social-emotional learning (SEL) initiatives (Paternite, 2005). Indeed, the optimal setting to deliver interventions that reach all youth appears to be in the school, which allows for interventions to reach a wide range of youth (Adelman & Taylor, 1991; Flaherty, Weist, & Warner, 1996; Kuo et al., 2013; Langford et al., 2014; Mental Health Commission, 2003).

How is the problem being addressed?

Despite the school setting presenting an ideal place to address depression and suicide prevention, there is a lack of evidence-based programming for schools to implement, and there continues to be a need for school-based mental health interventions to address depression (Stark, Arora, & Funk, 2011; Stark, Streusand, Arora, & Patel, 2011). Many schools rely on a targeted approach for depression and suicide; that is, they step in with interventions for students who are identified as having depression or being at immediate risk (Schaffer, 2016). Using the multi-tiered system of support (MTSS) framework for organizing services for behavioral and academic concerns provides schools with a system for utilizing

Tier 1 interventions for universal prevention efforts. The goal of Tier 1 is universal prevention through the promotion of protective factors and resiliency (Werner-Seidler, Perry, Calear, Newby, & Christensen, 2017; Stark, Arora, & Funk, 2011). One method that has been posited to address this need is through social-emotional learning (SEL) curriculum. SEL curriculums focus on developing social and emotional competencies to promote protective factors and reduce risk factors. SEL programs are designed to foster the development of five interrelated sets of cognitive, affective, and behavioral competencies: self-awareness, self-management, social awareness, relationship skills, and responsible decision making (Collaborative for Academic, Social, and Emotional Learning, 2005).

How have these efforts fared?

Participation in SEL programs has been associated with positive outcomes, such as reduced emotional distress, improved well-being, and better social and academic adjustment (Durlak et al., 2015; Greenberg & Crowley, 2015; Taylor et al., 2017; Weissberg et al., 2015). However, SEL curriculum is typically focused on elementary and middle school students, although there are some programs that target high school students. In two meta-analyses of SEL programs, fewer than 15% are used in high schools, which is the age group with the highest rates of depression and suicidal behaviors. Further, only one of 30 Tier 1 interventions specifically targets suicide and depression prevention (Durlak et al., 2011; Taylor et al., 2017; the Restoring the Native American Spirit program; Agora et al., 2019).

An alternative approach

In order to address this gap, the University of Texas Southwestern Medical Center's Center for Depression Research and Clinical Care has developed a collaborative school-based prevention effort, known as the Risk and Resilience Network (RRN), to develop and test approaches to aid in enhancing resiliency factors, prevent of depression and suicide, and improve early identification and care linkage for youth with depression and/or suicidality. The original aims of this initiative were: 1) to build collaborative partnerships with schools and youth-focused community organizations to study risk and resilience in youth, and 2) to develop and implement social emotional learning programs focused on mental health promotion and depression and suicide prevention. In collaboration with school partners and youth-focused community organizations, the RRN uses a deployment-focused approach (Weisz, 2015) to engage school stakeholders and families in developing research questions and then testing the implementing and testing the effectiveness of the program. The aim of the collaboration is to create innovative strategies for addressing depression and suicide prevention in schools. This report describes the rationale, design, and implementation process of a school-based network focused on depression and suicide prevention.

Methods

Partner Recruitment

Initial recruitment of schools and youth organization for the RRN focused on schools and organizations that had been recently impacted by mental health issues and/or suicide in the student population, as well as schools in disadvantaged areas. School principals or school counselors were initially contacted, although in larger school districts, the district administration was often contacted. Additionally, leaders from youth organizations that focus on wellness or mental health were contacted. Once interest has been generated, an initial meeting was set up to discuss: 1) the issue of depression in youth, 2) project description, 3) project timeline, and 4) partner expectations (both of RRN and of participating school or organization). Typically, one to three meetings were conducted, and then followed up with a Memorandum of Understanding (MOU) to outline the relationship between the RRN and the participating school.

Implementation

Each school, district, and youth organization provided individual approval processes and procedures that were to be observed. A member from the school leadership or administration team acted as a site champion and managed the work necessary to implement the RRN at their site. Depending on the school, these activities might include securing parental consent, access to relevant stakeholders (e.g., students, parents, parent-teacher organization leaders, teachers, counselors, administrators, camp counselors), space for on-site activities, and access to information data systems to integrate and monitor student activity/progress.

Ongoing Support

Once an RRN site has completed the MOU, the RRN coordinator from worked with the site to schedule the intervention, and then worked with the site to coordinate the implementation process and troubleshoot any issues related to implementation. In addition, the RRN coordinator worked with sites to implement program evaluation process, including consent procedures and follow-up assessment visits. Outreach and educational programs were also organized by the RRN coordinator.

Outreach and educational programs

The goal of outreach and educational programming was to increase awareness of youth depression and suicide prevention on several levels, including school nurses, teachers, counselors, administrators, and parents. Forums for parents were held to provide information on the signs and symptoms of depression and suicide risk in youth and how to raise resilient children. These presentations were often held during local school parent-teacher association (PTA) meetings and other community meetings where these topics may be of interest. Similar presentations were given at staff meetings or in-service workdays. Print materials were developed for distribution.

Metrics of Success

The RE-AIM framework highlights aspects in the design, dissemination, and implementation process that relate to achieving broad and equitable population-based impact (Gaglio et al., 2013; Glasgow et al.,

2019; Glasgow et al., 1999). The RE-AIM framework is used to assess the impact of RRN across the following five factors: Reach (what proportion of the target population participated?), Efficacy (what is the impact on specified outcome criteria?), Adoption (what proportion of practices/clinicians will adopt this program?), Implementation (what is the quality/consistency of delivery in real-world settings?), and Maintenance (to what extent is the program sustained over time?). The indicators and metrics associated with each factor are described in Table 1.

Operationalizing our Engagement Approach: Choosing a Cornerstone Program

In order to engage schools in the RRN, a cornerstone, evidenced-based program was selected to offer to schools as part of an implementation project. Based on the identified needs identified through our earlier discussions with schools, the Youth Aware of Mental Health (YAM) program was selected as our cornerstone program. YAM, developed in Europe, is a manualized universal school-based intervention program aimed at raising mental health awareness in youth. YAM is designed to promote mental health through increased awareness of risk and protective factors associated with suicide, including knowledge about depression and anxiety, and to enhance the skills and emotional resiliency needed to deal with adverse life events, stress, and suicidal behaviors (Wasserman et al., 2010). The YAM intervention was evaluated in a randomized, controlled trial (RCT) of ~11,000 9th graders conducted in 168 schools in 10 European countries (Wasserman et al., 2010; 2015). Students were randomized to Question, Persuade, and Refer (QPR; n=2721), YAM (n=2764), or a control group consisting of screening by professionals with referral of at-risk students (n=2933). At the 12-month follow-up, the YAM group, which included 1,987 youth with follow-up data, reported significantly reduced suicidality, including 55% fewer incident suicide attempts and 50% fewer cases of severe suicidal ideation, compared to control (Wasserman et al., 2015).

Intervention

The YAM intervention consists of five 45-60 minutes sessions, meant to be delivered in a regular classroom period over the course of 3 to 5 weeks. The five sessions are comprised of an opening interactive session on mental health, three role-play sessions, and a wrap-up interactive session. Additionally, students are given an information booklet, and mental health posters are hung in the classroom for the duration of the YAM intervention. The YAM intervention is delivered by a certified YAM instructor and helper, neither of whom are the students' regular classroom teacher (Wasserman et al., 2010).

YAM Program Evaluation

The YAM implementation project occurred between October 2016 and May 2019. This program evaluation analysis was approved by the Institutional Review Board at the University of Texas Southwestern Medical Center. Within the RRN partnering schools who agreed to implement YAM, all students received YAM and these students completed YAM program evaluation forms (described below in "Measures"). We report here on the YAM program evaluation results of the first three academic years of the RRN and YAM program partnerships (2016-2017, 2017-2018, and 2018-2019).

Of note, within a subset of these schools, students were provided with an opportunity participate in a research study examining 3-month outcomes of the YAM program on mental health and resilience, and a subset of students provided consent and assent for enrollment in a research study. The results of the first year of the RRN YAM feasibility research study, conducted in collaboration with Montana State University, to demonstrate the ability to train, implement, and assess outcomes in US adolescents have been reported (Lindow et al., 2020). The RRN continued this uncontrolled, within-subjects study of YAM in Texas, and additional analyses from the second and third years are being conducted.

Measures

YAM Acceptability and Satisfaction

Students completed anonymous questionnaires assessing acceptability and satisfaction of the YAM intervention. Student post-program evaluations were administered at the end of the 5-session intervention. In Year 1, post-program evaluations included 5 items (Supplemental Figure 1). Based on iterative feedback from students, these post-program evaluations were adapted to include additional questions about use of class time, facilitator effectiveness, and utility of skills covered by the program for Years 2-3, resulting in a 7-item questionnaire (Supplemental Figure 2).

Mental Health Literacy

During Years 2-3, the pre- and post- measure included a 10-item true/false survey to assess mental health knowledge, along with 7-items where students rated their mental health literacy and use of mental health strategies (e.g., awareness of feelings, stress management, communication of feelings) on a scale of 0 to 3 (Completely Disagree to Completely Agree). Higher scores indicate higher mental health literacy.

Help-Seeking Behavior

Students were also asked to select who they would seek help/advice from, when given various options (e.g., intimate partner, friend, parent, other relative/family member, mental health professional, etc.) using an adapted version of the General Help Seeking Questionnaire (GHSQ), which was initially developed to measure help-seeking behaviors for suicidal and personal-emotional problems (Deane, Wilson, & Ciarocchi, 2001). Individuals rate their likelihood on a 1-7 scale to seek help (1=extremely unlikely, 7=extremely likely) from different sources. Higher scores indicate higher intention of engaging in help-seeking behaviors (Wilson, Deane, Ciarrochi, & Rickwood, 2005).

Data analyses

Descriptive data are presented using the RE-AIM framework for the 39 approached community and school partners, 24 RRN partnerships, and 14,061 students who participated in YAM. For the YAM program evaluation analyses, the sample of interest was defined as those students who completed both pre- and post-program evaluation surveys (n=12,004; Year 1: 1,530 in the Year 1 cohort and 10,474 in the

Years 2 & 3 cohort). These data were collected without personal identifiers; thus, all analyses represent aggregate data. Descriptive statistics were used to describe all outcomes.

Results

We report here on the first three academic years of the RRN and YAM program partnerships (2016-2017, 2017-2018, and 2018-2019; Figure 1).

RRN RE-AIM Outcomes

Table 1 presents the RE-AIM framework outcomes for the RRN partnerships. Reach refers to the “absolute number, proportion, and representativeness of individuals who are willing to participate in a given initiative” (Gaglio et al., 2013). For RRN, a total of 39 school systems and community partners participated in discussions about initiating an RRN partnership, 24 of which entered into the RRN. Of these, 15 were school systems, including several large school districts in the North Texas area, as well as 9 community organizations, including youth organizations, churches, and foundations. Out of the 15 school systems, a total of 30 schools participated in the RRN cornerstone program, the YAM implementation project. Of the 30 schools within those RRN partnering school systems that adopted the YAM implementation program, there were 16 public schools, 10 charter schools, and four private schools. Of the 30 schools adopting YAM, 20 were in urban areas, five were in suburban areas, and five were in rural areas. In these 30 schools, YAM was delivered in 590 classes with 14,061 total students.

Effectiveness is the impact of an intervention on outcomes; program evaluation outcomes are presented below. Adoption is the “absolute number, proportion, and representativeness of settings and intervention agents who are willing to initiate a program” (Gaglio et al., 2013). Eleven (73.3%) out of the 15 school systems who agreed to RRN partnerships agreed to implement the YAM program. However, if considering all school systems initially approached for RRN partnership where the cornerstone YAM implementation program was described and offered (n = 36 school systems), the YAM implementation program adoption was 30.5%.

Implementation refers to fidelity to the various elements of an intervention’s protocol; for the YAM implementation program, the class of delivery is not specified by the YAM intervention manual. As such, the RRN team collaboratively worked with school leadership to determine which class would be appropriate for their school and school system. Schools often prioritized classes that had a wellness or mental health focus (e.g., health class, physical education class) or those that would allow for YAM delivery across a whole grade level (e.g., a required English class). All YAM sessions were 45 minutes; if a school utilized block scheduling (e.g., 90 minute classes), then two YAM sessions were completed during a block (similar to the design in many international YAM implementation programs. Implementation of the program was at no cost for the school partners, and the program was delivered by trained YAM facilitators who were part of the RRN team.

Lastly, maintenance is the “extent to which a program or policy becomes institutionalized or part of the routine organizational practices and policies” (Gaglio et al., 2013). Of the 28 schools who implemented YAM during Years 1 or 2, 25 (89.2%) continued the program the following year. Maintenance at the individual level (e.g., longer term outcomes of the program) was measured as part of the YAM feasibility research study; those outcomes will be reported in future publications.

YAM Program Evaluation Outcomes

Out of the 14,061 students (grades 7-12) who participated in the YAM program during these academic years, 85.4% (n=12,004; Year 1, 1530, Year 2 and 3, 10,474) completed the program evaluation surveys. Reasons for not completing the surveys included: class time did not permit (e.g., fire drill at the beginning of the first or fifth session of class), technology issues (e.g., wifi was not working and electronic program evaluation survey could not be accessed), and student refusal. In general, students

YAM Acceptability and Satisfaction

Table 2 present the post-evaluation ratings of YAM acceptability and satisfaction for Year 1 and Years 2-3. Overall, 66.8% of students in all years thought the YAM program was helpful, with the mean score being in the “helpful” range.

Mental Health Literacy

For Years 2-3, students rated their mental health literacy and use of mental health strategies (e.g., awareness of feelings, stress management, communication of feelings) on a scale of 0 to 3 (Completely Disagree to Completely Agree). Prior the beginning the first session of YAM, students (N = 9964) scored with a mean of 15.05 (SD = 3.89, range of 0 to 21). After completing the fifth session of YAM, students (N = 9762) reported mental health literacy scores were mean of 16.27 (SD = 3.97, range of 0 to 21; $T(19724) = 21.834$, [1.11-1.33], $p < .0001$, SE = .056).

Help-Seeking Behavior

At baseline, students (n=10,439) reported that an average of 2.15 (SD = 1.43, range 0 to 4) for help-seeking with informal sources (e.g. friend or parent) and 1.05 (SD = 1.23, range 0 to 4) with formal sources. After the implementation of YAM, students (n= 10,487) reported an average of 2.55 (SD = 1.21, range 0 to 4) for help-seeking with informal sources and 1.30 (SD = 1.29, range 0 to 4) with formal sources. The informal help-seeking pre- to post- report was significantly higher ($T(20924) = 22.089$, [.3691 to .4409], $p < .0001$, SE = .018), as was the formal help-seeking ($T(20924) = 14.714$, [.222 - .2902], $p < .0001$, SE = .017). Figure 2 displays the percentage of students who would seek help for mental health concerns from a variety of sources, and demonstrates increases in willingness to seek help from all avenues increased from pre- to post- intervention. Prior to YAM, the most common sources of help were friend (64%) and parent (59.2%), followed by other relative (46.7%) and boyfriend/girlfriend (45.0%). Following YAM, friend (77.8%) and parent (67.3%) continued to be the top two sources, with boyfriend/girlfriend

(55.8%) and Other relative (54.5%) next. Both prior to and post YAM, 7.7% of students reported they would not seek help from anyone for mental health concerns.

Lessons Learned During YAM Implementation

The YAM implementation program was delivered by trained YAM facilitators, who were part of the RRN team. In Year 1, the team included four YAM facilitators (a licensed clinical psychologist, a masters level licensed professional counselor, a masters level research manager, and a bachelors level research coordinator). In Years 2 and 3, the team included three YAM trainers (all trained facilitators who had then completed the YAM Trainer Certification – a licensed clinical psychologist, a masters level licensed professional counselor, and a masters level research manager) and four YAM facilitators (a psychology postdoctoral fellow, two masters level licensed professional counselor interns, a clinical psychology pre-doctoral practicum student, and two bachelors level research coordinators).

For the duration of the YAM implementation program each academic year, the YAM facilitators met weekly for YAM Consultation Meetings. During these meetings, the YAM facilitators discussed delivery and implementation at partnering schools, identified obstacles to YAM delivery and fidelity, and brainstormed solutions for addressing these obstacles within the YAM theoretical model. A standard YAM Consultation Meetings agenda, developed by the head of the RRN, was used, and included: 1.) Updates on YAM program at partnering schools, 2.) Successes: What went well this week (highlighting successes with: students, classes, teachers, or schools; with facilitators, helpers; with the YAM program, including effective examples and teaching/role playing/group engagement strategies)?, 3.) Obstacles: Any problems identified this week (related to students, classes, teachers, or schools; related to facilitators, helpers; related to YAM program)?, 4.) Brainstorming and Generating Solutions: How might the team address this?; and 5.) Closing Summary.

Table 3 includes the major consultation themes that were discussed in the weekly YAM Consultation Meetings. Some of these consultation questions were related to engaging school and youth stakeholders (e.g., “Teacher Engagement,” “Youth Participation,” “Classroom Behavior Management”), while others were related to implementation (e.g., “Implementation Logistics,” Helper Role Definition, Training, and Staffing,” “Facilitator Fatigue”). Interestingly, fewer consultation questions were raised about fidelity to the YAM program, with most questions relating to best practices for delivering the final session (“YAM Session 5 Difficulties”) which is the least structured of the five sessions and which has the least direct instruction given in the YAM Instructor Manual.

Discussion

The Risk and Resilience Network continues to partner with local schools and youth-focused community organizations. Use of the RE-AIM framework to plan and implement the RRN approach has been instrumental in confirming that essential elements that address external validity are present to allow for sustainable adoption and implementation of effective, generalizable, evidence-based interventions, such as the cornerstone YAM program. Given the high satisfaction with the YAM program by stakeholders

(with 89.2% of participating schools electing to continue implementation for a second year), we have worked with RRN partners to develop a new model for YAM dissemination to aid in the sustainability and maintenance of these efforts. In this new model, the RRN will train school personnel and community members to be YAM facilitators through the YAM Training Academy, providing the weeklong facilitator training and support through consultation calls, quality assurance/fidelity checks, and ongoing program evaluation efforts.

Barriers to sustainability of the YAM implementation program under the existing delivery method included RRN staff turnover, logistical challenges ability to deliver the program due to the school calendar, and insufficient funding to sustain the program outside of the research context. These barriers are in line with prior research about the sustainability of school-based public health programs (Arnold et al., 2021; Herlitz et al., 2020). In fact, in a systematic review, no relationship was found between evidence of effectiveness and sustainability, while key sustainability indicators included commitment/support from senior leaders, staff observing a positive impact on students' engagement and wellbeing, and staff confidence in delivering health promotion and belief in its value (Herlitz et al., 2020). Recommendations for increasing YAM program sustainability include developing sustainability plans with schools at the outset of the RRN partnership, developing the YAM Training Academy so that school personnel and community members can deliver the program, and using RRN academic-community partnerships to facilitate sustainability through funding opportunities.

Given the large-scale implementation of the YAM program, the RRN noted several challenges and solutions for delivering this program in the US (see Table 1 below). Additionally, the YAM program evaluation from the implementation project provided additional acceptability data for this program in the US. Participants in YAM reported that the program was helpful and enjoyable, demonstrating that framework of program is beneficial. YAM shows efficacy in teaching knowledge and skills related to mental health over a short, 5-session program. Program also saw increases in adolescents talking to friend or adult about mental health symptoms when needed over two-week period of YAM. Overall, results suggest that participants learned important information from the program.

Part of the RRN goal was to develop research projects in collaboration with school and community partners. In collaboration with school partners and youth-focused community organizations, the RRN utilizes several frameworks to approach this partnership. School stakeholders and families are engaged in developing research questions and then testing the implementing and testing the effectiveness of the program using a deployment-focused approach (Weisz, 2015). The other framework utilized was that of Community Partnered Participatory Research, in which both community and academic leaders collaborate in all phases of research with the goal of increasing feasibility of projects, establishing trust, building capacity, increasing buy-in for participation, and improving the sustainability of interventions and programs (Alegria et al., 2011; Lizaola et al., 2011). Another framework utilized was that of an "incubator model" of research, similar to the business incubator model, combining the use of controlled environments (e.g., RRN staff as YAM facilitators) to accelerate the success and growth of the developed intervention and combines rigorous testing within the lab and outreach to community and school

partners delivering services and youth, parent, and other stakeholders who are consumers of interventions (Asarnow, 2021).

Through these two frameworks, multiple new research initiatives have been developed in collaboration with RRN partners, including a school-based depression screening project (Hughes, in review), additional SEL programming development, novel technologies to advance resilience promotion efforts, and pandemic-related projects. Additionally, given the lack of effective Tier 2 programming for at-risk adolescents with subsyndromal anxiety and depression symptoms, we are working with another RRN partner to test a newly developed Tier 2 intervention program that incorporates the input of school personnel and at-risk youth to promote sustainability in school settings. The intervention addresses risk through promoting social-emotional skills (e.g. self-awareness and relationship skills) and improving adolescents' connections to their social support systems (e.g. peers, parents, and school). In response to the COVID-19 pandemic and associated changes in schools, RRN leaders collaborated with school leaders to develop and disseminate a survey about teacher and school staff responses to the pandemic (Anderson, 2021). RRN also has ongoing projects to develop and test websites and apps to monitor mood symptoms and promote mental health (e.g. resilience app for youth– Whippy: Resilience, (Elledge, 2019); depression self-monitoring tool – Mood Gauge).

Conclusions

In one large school district, the RRN has implemented a school-based depression screening and interconnected systems framework project linking depressed students with community mental health and social needs providers to aid in providing measurement-based care for depression while addressing the social determinants of mental health (Hughes, in review). This program is facilitated by an innovative virtual platform to implement MBC, integrating tracking of depressive symptoms with tracking of social determinant of mental health needs with services recommended and provided. Within the interconnected systems framework, schools partner with community providers to reduce the burden on current school mental health resources, with the virtual platform enabling school providers to communicate with outside providers to ensure students receive measurement-based care and their needs are met.

The RRN is a collaborative school-based prevention effort to develop and test approaches to aid in enhancing resiliency factors, preventing of depression and suicide, and improving early identification and care linkage for youth with depression and/or suicidality.

Abbreviations

PTA: parent-teacher association

RCT: randomized-controlled trial

RE-AIM: Reach, Efficacy, Adoption, Implementation, and Maintenance

RRN: Risk and Resilience Network

SEL: Social-emotional learning

YAM: Youth Aware of Mental Health program

Declarations

Ethics Approval and Consent to Participate

The University of Texas Southwestern Medical Center Institutional Review Board (IRB) reviewed this program evaluation analysis plan on February 26, 2020 and determined that it does not meet the definition of research under 45 CFS 46.102, and therefore does not require IRB approval or oversight. The results presented are from a program evaluation of a program implemented in schools.

Consent for Publication

All authors have consented to publish the manuscript.

Availability of Data and Materials

The data that support the findings of this study are available from the corresponding author, MHT, upon reasonable request.

Reporting Standards

A checklist of reporting guidelines has been submitted as an additional file.

Competing Interests

Dr. Hughes has served as Youth Aware of Mental Health (YAM) trainer and has consulted in the past for Mental Health in Mind International. Dr. Hughes also receives royalties from Guilford Press. Dr. Trivedi has served as an adviser or consultant for Abbott Laboratories, Abdi Ibrahim, Akzo (Organon Pharmaceuticals), Alkermes, AstraZeneca, Axon Advisors, Bristol-Myers Squibb, Cephalon, Cerecor, CME Institute of Physicians, Concert Pharmaceuticals, Eli Lilly, Evotec, Fabre Kramer Pharmaceuticals, Forest Pharmaceuticals, GlaxoSmithKline, Janssen Global Services, Janssen Pharmaceutica Products, Johnson & Johnson PRD, Libby, Lundbeck, Meade Johnson, MedAvante, Medtronic, Merck, Mitsubishi Tanabe Pharma Development America, Naurex, Neuronetics, Otsuka Pharmaceuticals, Pamlab, Parke-Davis Pharmaceuticals, Pfizer, PgxHealth, Phoenix Marketing Solutions, Rexahn Pharmaceuticals, Ridge Diagnostics, Roche Products, Sepracor, Shire Development, Sierra, SK Life and Science, Sunovion, Takeda, Tal Medical/Puretech Venture, Targacept, Transcept, VantagePoint, Vivus, and Wyeth-Ayerst Laboratories; he has received grants or research support from the Agency for Healthcare Research and Quality, Cyberonics, NARSAD, NIDA, and NIMH. Mr. Gutierrez, Dr. Anderson, Ms. Kahalnik, Dr. Fuller, and Ms. Mayes have no disclosures to report.

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Author Contributions

J.H., L.G., F.K., T.M., and M.T. conceived of the presented idea. J.H., L.G., and A.F. collected the data. J.H., T.M., and J.A. cleaned the data and performed the computations. All authors read, contributed to, and approved the final manuscript.

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Tables

Table 1. RE-AIM Indicators, Metrics, and Outcomes

	Indicator	Metric	Outcome
Reach	Overall RRN Partner Outreach	Proportion of school systems and community partners (24) that participated out of number of schools approached (49)	49.0%
	RRN Partner Participation	Number of RRN Partners (community partners and school system partners)	24
	RRN Community Partner Participation	Number of community partners from youth-focused organizations	9
	RRN School Partner Participation	Number participating school systems	15
	YAM Community Partner Participation	Number participating community groups who agreed to YAM delivery	2
	YAM School Partner Participation	Number participating school systems who agreed to YAM delivery	11
	YAM Program School Participation	Number participating schools	32
	School Representativeness	Representativeness of schools (type: public, private, rural, etc.; location: urban, suburban, rural)	<ul style="list-style-type: none"> • 16 public, 10 charter, 4 private • 20 urban, 5 suburban, 5 rural
	Classroom Participation	Total number of classrooms	590
	Student participation	Number of students	14,061 (YAM)
	RRN School Staff	Number of staff talks	64
	RRN Parent	Number of parent talks	23
Effectiveness	Program Satisfaction	Student satisfaction	See Table 2
	Impact on Mental Health Literacy	Improvement in student outcomes by the pre- and post- research evaluation	See Results
	Impact on Help-Seeking Behavior	Improvement in student outcomes by the pre- and post- research evaluation	See Results and Figure 3

Adoption	YAM Program Offered	Proportion of school systems (11) that participated out of number of school systems approached (36) for YAM and RRN partnership	30.5%
	YAM Program Adoption in RRN Partners	Proportion of school systems (11) that participated out of number of RRN partnering school systems approached (15) for YAM	73.3%
Implementation	Number of Schools Implementing YAM	Number of schools who implemented YAM	30
		Grades in which YAM was implemented	7 - 12
		Types of classes in which YAM was provided	<ul style="list-style-type: none"> • Health • English • Professional Communications • Physical Education
Maintenance	Adoption of Program for Multiple Years	Number of "return" customer schools	25

Table 2. YAM Acceptability and Satisfaction

	Mean (SD)
	% (n)
	N=1530
YEAR 1	
Overall, I would rate the YAM program as:	3.72 (.961)
1 – Boring	3.5% (53)
2	4.2% (64)
3 – Okay	31.5% (482)
4	37.7% (577)
5 – Fun	22.7% (348)
No Response	0.4% (6)
I believe the YAM program added to my understanding of mental health and how I can consider my feelings, thoughts, and actions to make healthy decisions.	3.74 (.961)
1 - Strongly Disagree	
2	
3 - Neutral	
4	2.6% (40)
5 - Strongly Agree	5.4% (82)
No Response	29.5% (451)
	37.7% (577)
	24.4% (373)
	0.5% (7)

Overall, I think the YAM program was:	3.87 (.975)
1 - Not Helpful	
2	2.4% (37)
3 – Neutral	4.4% (67)
4	
5 – Helpful	25.8% (395)
No Response	36.1% (522)
	30.7% (469)
	0.7% (10)
YEARS 2-3	
Overall, I think the YAM program was helpful	4.04 (1.05)
1 - Not Helpful	
2	3.2% (335)
3 – Neutral	3.2% (337)
4	
5 – Helpful	21.0% (2197)
No Response	26.4% (2763)
	40.4% (5233)
	5.8% (609)
I believe the YAM program added to my understanding of mental health	4.03 (1.08)
1 - Strongly Disagree	
2	
3 - Neutral	3.5% (362)
4	
5 - Strongly Agree	4.9% (518)

No Response	18.1% (1897)
	25.9% (2716)
	41.6% (4357)
	6.0% (624)
It was worth missing regular class time for the YAM program	4.14 (1.16)
1 - Strongly Disagree	
2	
3 - Neutral	4.4% (465)
4	5.1% (531)
5 - Strongly Agree	15.7% (1646)
No Response	16.4% (1719)
	52.1% (5456)
	6.3% (657)
The YAM facilitator was skilled at presenting topics and answering questions	4.39 (.92)
1 - Strongly Disagree	
2	
3 - Neutral	1.7% (175)
4	2.3% (243)
5 - Strongly Agree	11.5% (1209)
No Response	20.9% (2190)
	57.4% (6014)
	6.1% (643)
The YAM program gave me knowledge and skills I can use	4.07 (1.08)

1 - Strongly Disagree	
2	3.4% (355)
3 - Neutral	
4	4.3% (450)
5 - Strongly Agree	17.8% (1864)
No Response	24.8% (2598)
	43.2% (4526)
	6.5% (681)

Table 3. Lessons Learned in Implementation of Cornerstone Program, YAM

Identified "Lesson"	Summary of Issue	Outcome
Helper Role Definition, Training, and Staffing	<ul style="list-style-type: none"> - Little guidance is offered in the YAM Facilitator Manual regarding selecting and training individuals for the helper role. - Used new facilitators as helpers to give more experience in the classroom. - Need to improve training for Helpers - Identified "stray" in training that occurred over the course of the school year 	<ul style="list-style-type: none"> - Hired additional temporary workers to serve as Helpers, with focus on those who are in training for education or mental health - Use of newly trained YAM facilitators so they gain classroom experience - Developed formalized Helper Training with accompanying training slides and video - Sent monthly email to remind Helpers of role responsibilities, including assisting with class set-up, staying off phones, taking notes for final session - Focused on strengthening Helper and Facilitator relationship; demonstrates the relational aspect
YAM Session 5 Difficulties	<ul style="list-style-type: none"> - Facilitators reported difficulties in conducting Session 5 with some cohorts of students, where there was little discussion or participation 	<ul style="list-style-type: none"> - During YAM Consultation Meeting, developed list of engagement activities to aid in discussion and participation
"Facilitator Fatigue"	<ul style="list-style-type: none"> - "Stray" from youth focus – with facilitators telling similar stories over the year 	<ul style="list-style-type: none"> - Consistent attendance at YAM Consultation Meeting; focus on "fatigue/burnout" in the meeting to prevent this
Teacher Engagement	<ul style="list-style-type: none"> - Teacher engagement and education about YAM is key - Continued difficulties with newer teachers not understanding program intent/aims - Staff seemingly not supportive of program (i.e., scheduling changes, students getting mixed up). Seemed that the YAM team was imposing on the academic plans in these schools. 	<ul style="list-style-type: none"> - Created YAM Teacher FAQ, describing program in greater detail - Teacher FAQ emailed and teacher FAQ given/reviewed prior to first session (when Facilitator and Helper introduce themselves). - RRN leadership met with stakeholders, including teachers, district administrators, and school leaders, to review YAM implementation program materials and process

<p>Youth Participation</p>	<ul style="list-style-type: none"> - Good to prep students ahead of time regarding program is coming - Seemed that in larger schools, students did not know one another well. Impacted volunteering for role plays and participation in discussion. When students have enough rapport that they are willing to disagree; when students know one another 	<ul style="list-style-type: none"> - Formalized as part of research program intro (“prep for YAM coming”) - Consider Icebreaker if students don’t know one another (Dilemma card activity can also serve as this) - Rights/expectations slide: “plug” that students say they like “real talk” and role of students in using this as their time
<p>Implementation Logistics</p>	<ul style="list-style-type: none"> - Class Size: For some sections, teachers had combined classes to reduce the number of Facilitators needed. - Setting of the program: Delivery in Physical Education class did not work well as students expressed frustration at being taken away from physical activity/gym. - Physical location of program: Being in a gym doesn’t work well; switching locations doesn’t work well 	<ul style="list-style-type: none"> - If schools combine classes, request that RRN leadership reach out to school leadership to address the concern - RRN leadership have more conversations regarding the importance of proper placement of YAM implementation program with administration level and school leaders
<p>Classroom Behavior Management</p>	<ul style="list-style-type: none"> - Concern that some Helpers were too “authoritative” when asking students to put away phones, calm down; not in line with YAM volunteer participation and youth-centered theory - Still some concern regarding behaviorally, where is the line; How does that work within YAM theory? 	<ul style="list-style-type: none"> - Gave feedback to Helpers and added component on this to Helper Training - YAM Facilitators reviewed YAM Facilitator Manual and did practice role plays; YAM Trainer in YAM Consultation Meeting demonstrated how to handle these tough behavioral situations - Encouraged facilitators to questions regarding classroom behavior management to YAM Consultation Meeting

Figures

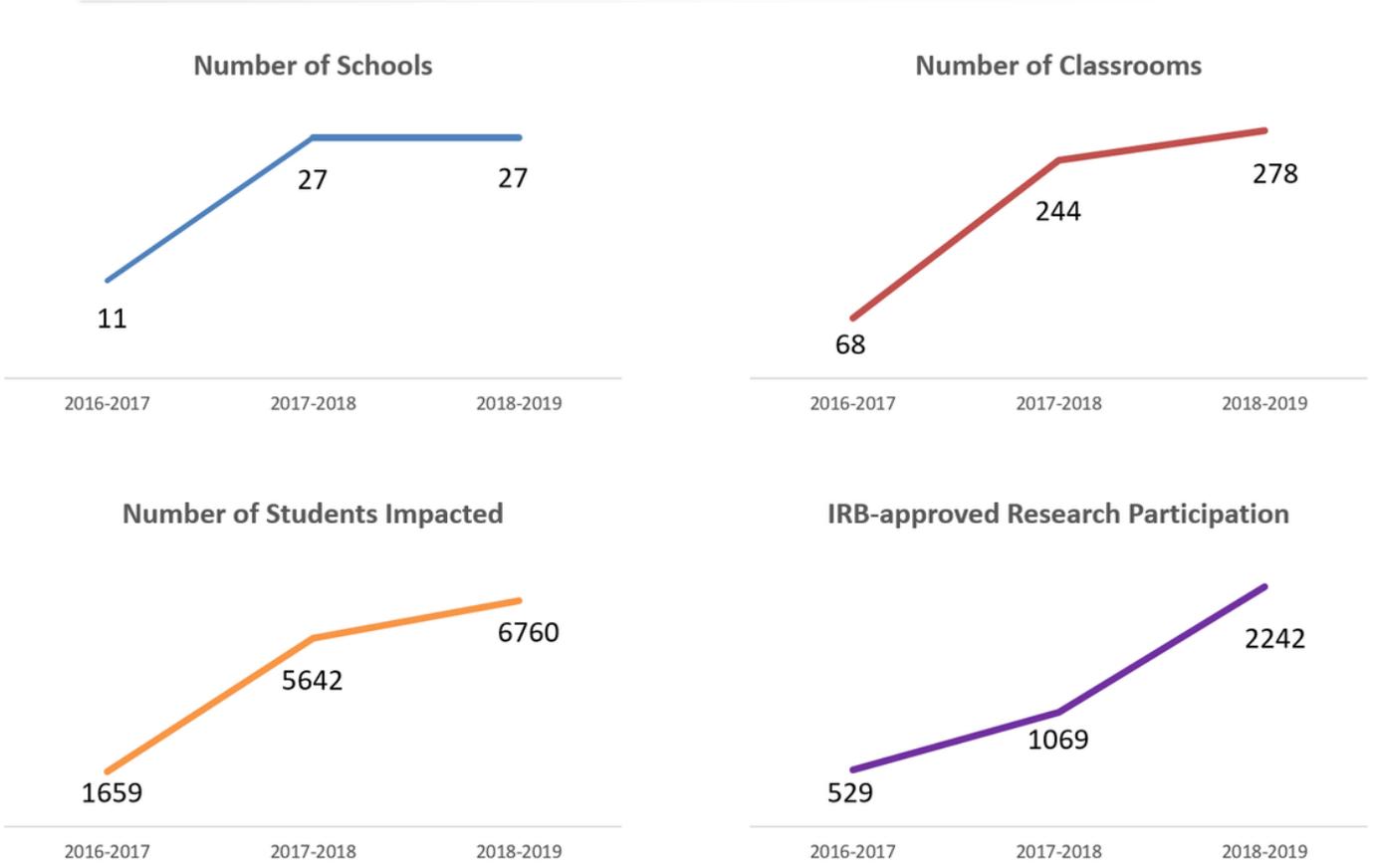


Figure 1

RRN Reach

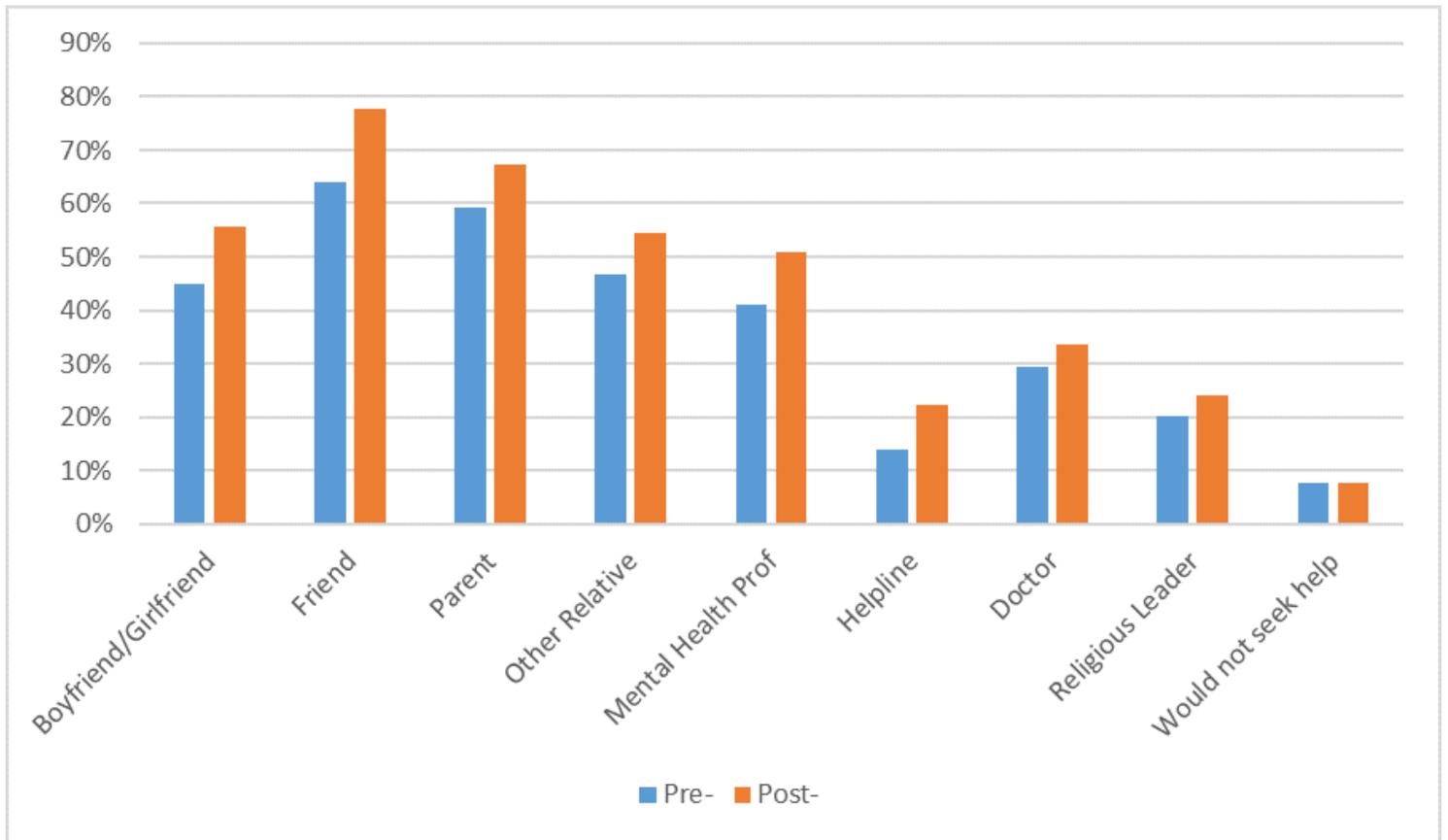


Figure 3

Help-Seeking – Years 2-3

Supplementary Files

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- [StaRlchecklistforauthorcompletion.docx](#)
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