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RESEARCH

Assessing the Feasibility, Effectiveness, and Acceptability of a Multicomponent Mental Health and Wellbeing Prevention Program Adapted for Youth

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Abstract

The mental health needs of youth are increasingly urgent, necessitating effective interventions. This study used survey methods to evaluate the feasibility, effectiveness, and acceptability of Thrive, a multicomponent program designed to promote mental health and wellbeing. The program, which was delivered over six weeks via Zoom, was adapted for youth and integrates elements of positive psychology, cognitive behavioral therapy, and mindfulness (Heintzelman et al., 2020). A total of 677 middle and high school students in the United States participated in the study. Moderate attrition was observed, with 75% of participants who attended the program completing five or six sessions. Completion rates were higher for white and middle and junior high students than for nonwhite and high school students. Acceptability was high with participants reporting a positive experience, citing supportive facilitators, engaging content, and a sense of community as key strengths. In terms of effectiveness, results showed significant reductions in symptoms of depression and anxiety as well as improvements in quality of life from pre-test to post-test. Notably, students of color experienced a greater reduction in anxiety compared to white, non-Latino students. Suggestions for program enhancement included adjustments to scheduling and logistics and incorporating a greater variety of activities to enhance engagement. The findings underscore the promise of Thrive as a scalable intervention while highlighting areas for further refinement.

Keywords Positive Psychology · Intervention · Wellbeing · Adolescents · Group Intervention · Mental Health · Prevention

Adolescence, a time of rapid physical and mental changes and heightened neuroplasticity, is an important developmental period. Adolescent mental health and experiences make up risk and protective factors that impact development during the transition to adulthood and beyond (Teodorczuk et al., 2019). Unfortunately,

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international studies show that subjective wellbeing levels in youth tend to decrease from early to late adolescence (González-Carrasco et al., 2017). Furthermore, rates of mental health challenges in youth are increasing in the U.S. and across the globe (Racine et al., 2021). Globally, an estimated one in seven individuals aged 10 to 19 is affected by a mental health disorder, contributing to 15% of the overall disease burden within this age group (World Health Organization, 2024). In the United States (U.S.), a high income, diverse, and technologically advanced context, the Youth Risk Behavior Survey found that the percentage of high school students who felt persistently sad or hopeless increased from 2011 to 2021 for every race, ethnicity, and gender (Centers for Disease Control & Prevention, 2023).

In response, countries around the world have shown growing interest in school-based and digital interventions to promote adolescent mental health and prevent the development of clinical disorders, reflecting a broader global concern about declining youth mental health (Racine et al., 2021; World Health Organization, 2024). Research demonstrates that early, developmentally appropriate mental health programs can improve social and academic adjustment and reduce psychopathology later in life (Ramey & Ramey, 2004). Since neuroplasticity is high during childhood and adolescence, developmentally appropriate youth programs can be particularly impactful in instilling habits and mindsets for a positive life trajectory. Additionally, adolescents who experience high levels of wellbeing are less likely to develop a mental illness during adulthood (Olsson et al., 2013).

This study evaluates the feasibility, effectiveness, and acceptability of a prevention and promotion program aimed at enhancing adolescents' mental health and wellbeing in the U.S., a multicultural setting characterized by both technological access and mental health disparities. The Thrive program, developed and implemented by WeBeWell, is an adaptation of the ENHANCE intervention originally designed for adults. Previous randomized controlled trials of ENHANCE demonstrated significant benefits, including increased life satisfaction and positive emotions (Heintzelman et al., 2020; Kushlev et al., 2017, 2020), decreased negative emotions and stress (Heintzelman et al., 2020) and improved self-reported physical health (Kushlev et al., 2020) with benefits sustained for six months. Thrive's curriculum integrates evidence-based practices from positive psychology, cognitive behavioral therapy, and mindfulness meditation to address the unique needs of adolescents**.**

Positive psychology interventions (PPIs) aim to act in a preventative manner, focusing on evidence-based methods for strengthening positive emotions, thoughts, and behaviors through simple skills and practices easily integrated into daily life (Tejada-Gallardo et al., 2020). Positive psychology interventions may be able to address low and moderate-level mental health needs before they worsen and/or require clinical treatment. Multicomponent positive psychology interventions address at least two components of wellbeing; gratitude, hope, and character strengths, for example. A meta-analysis reviewed nine school-based multicomponent positive psychology interventions (MPPIs) for 10–18-year-olds in Europe, Australia, the U.S., and Israel aimed at increasing wellbeing and reducing depression and anxiety (Tejada-Gallardo et al., 2020). They found that MPPIs were effective overall, with significant increases in subjective wellbeing and significant decreases in symptoms of depression. Cognitive behavioral therapy (CBT) is an intervention

based on the idea that many psychological problems stem from unhelpful or harmful thinking and behavior patterns and efforts to alter the patterns can help people cope with these problems. The strategies taught in CBT emphasize self-help and the ability for participants to develop skills to utilize outside of sessions in a self-guided manner (American Psychological Association, n.d.). CBT is future-oriented, focusing mostly on moving forward with positive coping skills rather than reflecting on past life events. Mindfulness meditation practices were another component of the Thrive intervention supported by evidence of its benefits. For example, a large meta-analysis of studies conducted across North America, Europe, Australia, and Asia found that mindfulness meditation led to significant reductions in depression among adolescents (Reangsing et al., 2021). Similarly, Li et al. (2023) reported decreased anxiety symptoms in Chinese students, and Carsley et al.'s (2018) meta-analysis demonstrated increased well-being following mindfulness meditation interventions.

Mental health prevention programs strive to reduce risk factors and increase protective factors to reduce further mental illness and negative symptoms. They can be particularly helpful because they can address problems in a supportive, low stress environment before the need for clinical care or medical intervention arises (Weissberg & O'Brien, 2004). School-based mental health programs are growing in popularity and are implemented commonly. These school-based programs appear to be beneficial yet also face challenges such as taking time away from core academic instruction and lack of training of teachers or professionals to deliver the interventions (O'Reilly et al., 2018; Vostanis et al., 2013). In addition, many programs designed for implementation in schools limit individual autonomy and choice because adaptations or deviations from the script are seen as threats to program fidelity (Lendrum et al., 2013). The variation in quality and quantity of programming students receive from classroom to classroom and school to school also makes it difficult to measure and analyze the true impacts of these programs (Weissberg et al., 2004).

There is a need for programs that are adaptable to individual and place-based needs and acknowledge everyday experiences of students (Bailey et al., 2019). Programs that teach skills and focus on rehearsal of the skills have not been consistently effective with adolescents 14–17 years old. Skills-based lessons are most effective for younger children, while adolescents do better when taught a mindset model that can be used in a variety of settings (Yeager, 2017). Adolescents are sensitive to feeling stigmatized or condescended to, which is an important consideration in designing programming that they consider respectful and relevant.

Recognizing the problems that schools and teachers face when implementing mental health prevention programs brings about a question of changing the delivery setting to potentially improve program impact. Out-of-school time (OST) programs can provide a strong option for implementing these types of programs for several reasons. OST programs typically have more flexibility and fewer time and curricular constraints than a school-based environment. OST settings also tend to be less formal and structured, offering increased opportunities to develop the type of close, trusting relationships that enhance learning and shift to specific student needs (Jones et al., 2017). However, few programs have been designed specifically for OST (Helms et al., 2021).

In addition to the location (school vs. OST) of the programs, the manner of delivery of the program (in-person vs. digital) is important. Virtually delivered interventions have both potential benefits and drawbacks. A 2021 review of 18 meta-analyses on the effectiveness of digital health interventions to enhance the mental health of adolescents and young people found that computerized cognitive behavioral therapy interventions had a positive impact on anxiety and depression measures, while other digital interventions did not show a significant impact on adolescent mental health (Lehtimaki et al., 2021). Programs with in-person elements, such as interactions with a therapist, parent, or peer, were found to be more effective than fully self-administered interventions. Virtual services also can be convenient because they eliminate travel time and the need for childcare or transportation, which often act as barriers to in-person treatment (Edwards et al., 2020).

Beyond the content of the intervention and the program delivery setting, the way that a program is designed and program outcomes are measured are important to program success. Based on the evidence reviewed above and the current state of research, adolescent mental health prevention programs should focus on several elements to ensure quality. Teaching positive mindsets and coping mechanisms and aligning adult-sanctioned healthy choices with peer-sanctioned sources of status and respect can create a supportive emotional climate in the program (Yeager, 2017). To maximize program impact, SAFE guidelines should be followed, creating a program that is Sequenced, Active, Focused, and Explicit. A meta-analysis of 75 after-school programs found that those that aligned with SAFE guidelines were more effective than programs that did not (Durlak et al., 2010).

A literature review of virtual group therapy for youth and children (with a focus on programming during the COVID-19 pandemic) found the potential for reduced negative emotions and improved relationships between youth and their families (Edwards et al., 2020). Challenges of virtual group therapy include feelings that the space lacks authenticity, lack of connection to the group, and difficulty feeling comfortable among the other group members. To overcome these challenges, counsellors and facilitators can make efforts to give participants multiple chances to speak and engage throughout the session and maintain a ratio of one facilitator for every four participants (Weinberg, 2020).

1 Current Study

The current study aimed to evaluate the feasibility, effectiveness, and acceptability of the adapted six-week program, called Thrive, using survey methods in the context of the United States, where concerns about mental health have been rising amid growing disparities and increased demand for accessible, scalable interventions. We were interested in whether the intervention could effectively reach adolescents, especially underrepresented students (e.g., students of color, non-binary, or transgender students). We examined the feasibility and acceptability of the program by examining completion data for the program as well as responses to open-ended questions. We examined whether participants who completed the program differed from those who did not complete the program. In terms of effectiveness, we examined outcomes

reflecting wellbeing, including quality of life and resilience, and examined mental health outcomes of depression and anxiety. Our hypothesis was that the program would result in significant improvements in post-intervention scores across all measures of wellbeing and mental health. We also examined whether the effectiveness of the Thrive program differed by participants' gender, race/ethnicity, and grade level. Finally, we examined acceptability based on responses to open-ended questions and an evaluation of whether the program met the Sequenced, Active, Focused, and Explicit (SAFE) guidelines for youth skills programming (Durlak et al., 2010).

2 Methods

The study used a survey approach with both open-ended and closed-ended items. Open coding was used to categorize key themes from the open-ended surveys. Quantitative analyses were conducted using SPSS version 29. A sensitivity analysis indicated that the sample size was sufficient to detect small effects in changes over time in mental health (see more details below).

2.1 Participants

Participants were youth in the U.S. in grades 6 – 12 who voluntarily took part in the Thrive program across 100 groups from Fall 2021 to Spring 2024. Six hundred seventy-seven youth completed the pre-intervention survey and 462 completed the Thrive program and the post-intervention survey (see Fig. 1). The majority of participants were female and white, non-Latino (Table 1).

2.2 Compliance with Ethical Standards

This study received ethics approval from the University of Utah Internal Review Board # IRB_00140200). Parents provided written permission for their children to participate. Youth provided written assent. Participants received $80 after program completion if they attended and participated in the research.

2.3 Procedure

Participants were recruited in a variety of ways. Thrive was marketed to administrators, parents, and students throughout the state. School counselors and licensed clinicians referred the adolescent clients who they deemed were an appropriate fit for the program to Thrive. Additionally, advertisements were made in local newspapers and an array of social media channels. The program was voluntary and not required for any school course or credit. Some participants were registered by their parents or guardians, and others registered themselves.

Participants took surveys pre- and post-intervention. The pre-intervention survey was taken one to five weeks before the program began, depending on time of recruitment. Participants completed post surveys 7–14 days after the intervention.

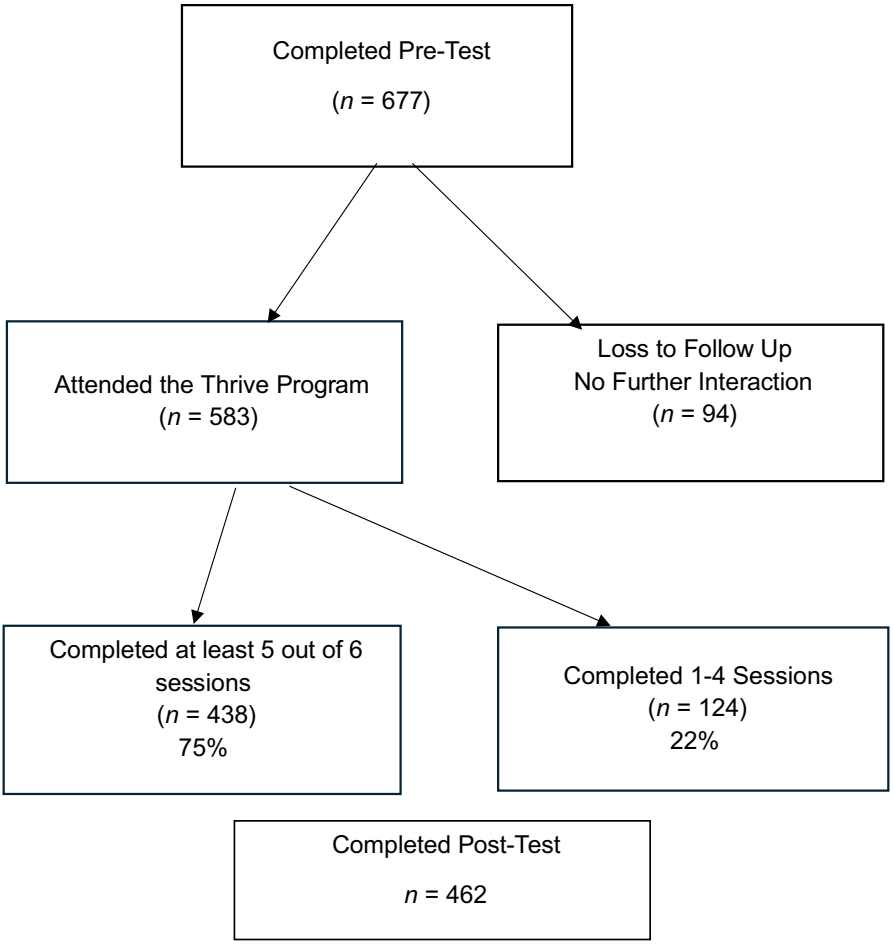

Fig. 1 Participant Flow

The pre- and post-intervention surveys contained largely the same items: self-report measures of depression symptoms, anxiety symptoms, resilience, and youth quality of life in order to assess if the program impacted mental health and wellbeing. The pre-intervention survey also included demographic questions about gender and race/ethnicity. The post-intervention survey included open-ended program feedback questions.

2.4 The Thrive Intervention

The Thrive program is a 6-week intervention that meets for one hour per week, on the same day and time each week. Thrive is delivered online via Zoom. In order to encourage connection and interactivity, participants are expected to turn their cameras on for the entirety of each meeting and engage in discussion based on prompts

Table 1 Demographic Characteristics of Sample by Completion Status

Measure	Total Sample $N=666$ (%)	Completed Program		Did Not Complete Program	
		n	%	*n*	%
Race/Ethnicity:					
White, non-Latino	488 (73%)	348	71%	140	29%
BIPOC	191 (29%)	114	60%	77	40%
Grade:					
Middle School	251 (38%)	188	75%	63	25%
Junior High	233 (33%)	159	71%	64	29%
High School	205 (31%)	115	55%	90	45%
Gender:					
Male	286 (43%)	185	65%	101	35%
Female	352 (53%)	247	70%	105	30%
Transgender	11 (2%)	8	73%	3	27%
Nonbinary	17 (3%)	11	65%	6	35%

Note: *N*s vary due to missing data

and questions from the facilitators. The Thrive curriculum was delivered through WeBeWell's app and web platforms, which were created in partnership with Framework, a hosting platform designed to connect and educate groups of people. The app and web platforms house additional videos and content to expand upon each week's topic. Additionally, it is where weekly homework assignments are posted and where participants are asked to post three things they were grateful for each week. Gratitude lists are posted in an open discussion forum and all participants and facilitators can view the posts of others. Homework assignments are posted immediately after a session and involve preparation for the upcoming week's topic and session. Thrive encourages engagement by asking participants, at the beginning of each session, to share one thing they are grateful for and how their overall well-being has been over the past week. During the lesson there are an additional one to three discussion prompts.

Each week there is a different topic covered (see Table 2). The PPI interventions in the Thrive program include practicing gratitude (Owens & Waters, 2020) and using character strengths (Peterson & Seligman, 2004). The CBT components included in the Thrive program include understanding the relationship between thoughts, emotions and behaviors, positive self-affirmations, and identifying and restructuring negative thinking traps. The Thrive program also includes topics related to self-awareness (character strengths and goals), self-management (mindfulness and meditation), and relationship skills (communication and active listening). Meditation and mindfulness are covered in the final week.

All sessions were held virtually over Zoom. At the start of the program, groups had six to 12 students and two to three facilitators. Facilitators are paraprofessionals, typically undergraduate or graduate students who previously participated in a version of the program geared towards college students. Facilitators varied in their

Table 2 Intervention Program Topics by Week

Week	Subject	Drawn From:
1	Intro to subjective wellbeing, gratitude, and mental health	Positive Psychology
2	Character strengths and values	Positive Psychology
3	Goal identification, intrinsic motivation, flow, aligning goals with strengths and values	Positive Psychology
4	Relationships, active listening, responding; positivity ratio	Positive Psychology
5	Thoughts, emotions, and behaviors; Thinking traps, restructuring techniques	CBT
6	Mindfulness, meditation	Mindfulness

fields of study and majors; some were graduate students in fields such as clinical psychology, social work, or related healthcare fields. Facilitators were trained by program leaders and licensed clinicians in group dynamics, aspects of motivational interviewing, and theories relevant to group learning and behavior change such as Rogerian theory, experiential learning, and social determinism theory. Facilitators were also educated on concepts from positive and clinical psychology related to each week's topic. Finally, facilitators were trained on protocols to handle potential emergencies regarding mental health challenges, such as suicidality or potential abuse at home or school. Facilitators meet weekly before facilitating their group session to train, discuss issues, and role-play that week's lesson.

Thrive sessions typically took place on weekdays during the hours of 4:00 – 8:00 pm, hours when many parents and guardians may be working, preparing dinner, or tending to the needs of other children. Thrive's online delivery method may have made the program more accessible for families. There was no control group for this study.

Thrive's facilitator fidelity was maintained through lesson scripts and weekly trainings. Each lesson had a corresponding script that was read by the facilitator. Each group received the same instruction and discussion prompts, so sessions only differed based on the responses of the participants. Before the week's session there was a training meeting with Thrive facilitators and co-facilitators to address any questions or concerns about facilitating and to review the upcoming week's script and lesson. Lead facilitators provided short lectures based on a standardized script covering the week's lesson, and they guided group discussions and skills practice on the topics. Co-facilitators assisted with technology and managed the chat feature.

2.5 Measures

Depressive Symptoms. Depressive symptoms were measured using the Center for Epidemiologic Studies Depression Scale Revised (CESD-R10) (Radloff, 1977). The scale includes 10 items which describe symptoms associated with depression experienced over the past week (e.g., "I felt lonely"). Participants were asked to respond on a four-point scale (0 = Rarely or none of the time (less than 1 day), 1 = Some or a little of the time (1–2 days), 2 = Occasionally or a moderate amount of time

(3–4 days), 3 = Most of the time (5–7 days)). Two items relate to positive mood and are reverse coded. The total score is calculated by totaling all items scored after reversing the positive mood items. Possible range for scores is 0 − 30 with higher scores representing greater symptoms of depression. Any score above 10 is considered depressed. Cronbach's alpha for the CESD-R10 was 0.84 for the pretest and 0.79 for the post-test.

Anxiety Symptoms. Anxiety symptoms were measured using the Generalized Anxiety Disorder (GAD-7) Questionnaire (Williams, 2014). This scale contains seven items associated with symptoms of anxiety experienced over the previous two weeks (e.g., "Not being able to stop or control worrying"). Respondents were asked how often they were bothered by each symptom on a four-point scale (0 = not at all, 1 = several days, 2 = more than half the days, 3 = nearly every day). The total score is calculated by totaling all items scored, with a possible score range of 0 – 21. Scores below 10 indicate mild and minimal anxiety while scores above 10 indicate moderate and severe anxiety. Cronbach's alpha for the GAD-7 was 0.89 for the pretest and 0.87 for the post-test.

Resilience. Resilience was measured using an abbreviated form of the Connor-Davidson Resilience Scale (CD-RISC2) (Vaishnavi et al., 2007). This scale contains 2 items; "I am able to adapt when changes occur" and "I tend to bounce back after illness, injury, or other hardships". Respondents are asked to indicate how much they agree with the statements over the past month and respond on a five-point scale (0 = not at all true, 1 = rarely true, 2 = sometimes true, 3 = often true, 4 = true nearly all the time). The two items are summed for a score range of 0 - 8. The mean CD-RISC2 score for U.S. adults is 6.91, and lower mean scores were found in psychiatric groups with depression and generalized anxiety disorder (5.12 and 4.96, respectively) (The Connor-Davidson Resilience Scale). Cronbach's alphas were 0.68 for both the pre- and post-tests.

Youth Quality of Life. Youth quality of life was measured with the Youth Quality of Life – Short Form (YQOL-SF) (Patrick et al., 2002). The scale contains 15 items (e.g., "I feel my life is full of interesting things to do" and "I feel good about myself") and respondents are asked to answer how closely the statement applies to them in general on a scale from 0 (not at all) to 10 (very much). The measure is scored by summing responses to each item and transforming them to a 0 – 100 scale using the following formula:

$$\frac{actual\ score - lowest\ possible\ score}{possible\ score\ range} * 100 = \text{transformed score}$$

Transformed scores for all 15 items are averaged to get the total score for the YQOL-SF. A higher score indicates a higher quality of life. Cronbach's alpha for the YQOL-SF was 0.93 for the pretest and 0.94 for the post-test.

Program Acceptability. Lastly, three questions on program feedback were included in the post-test survey. Items included "What did you like most about the program and why?", "What kept you in the program over the weeks? Why did you choose to stick with it and complete it?", and "What, if anything, could we improve about the program, and why?". These questions were open-ended. The themes that

emerged from these open-ended items were identified by two coders through an iterative process. Once the coding scheme was finalized, all open-ended responses were coded. Interrater reliability for the coding of these three questions ranged from 79%—90% agreement. Disagreements were resolved through conferencing.

3 Results

3.1 Thrive Program Feasibility

Attendance and Attrition. The first set of analyses utilized attrition data to examine the feasibility of the program. Six hundred seventy-seven students completed the pre-survey, five hundred eighty-three attended at least one session, and four hundred thirty-eight (75%) of these students completed the Thrive program (as indexed by attending at least 5 of the 6 sessions, called completers). See Table 3 for attendance data. Attendance data was missing for a small subset of participants.

A chi-square test of independence showed that there was no significant relationship between gender and program attrition, X^2 ($df = 3$, $N = 666$) = 2.37, $p = 0.50$. A chi-square test of independence showed that there was a significant relationship between race/ethnicity and program attrition, X^2 ($df = 1$, $N = 679$) = 8.53, $p = 0.003$. White participants were more likely to complete the program than were participants of color. A chi-square test also showed that high school students were less likely to complete the program than expected by chance, and junior high and middle school students were more likely to complete the program than expected by chance, X^2 ($df = 2$, $N = 679$) = 19.97, $p < 0.001$.

A series of univariate ANOVAs were performed to analyze differences in pre-survey outcome measure scores by completion status (see Table 4). Pre-survey scores did not differ significantly by completion group for depression or anxiety. Significant differences in pre-survey resilience and quality of life levels were found between completion groups such that resilience and quality of life were significantly higher for those who completed compared to the students who did not complete. These effect sizes, however, were small.

In order to analyze what elements of the program were most important and encouraging to program completers, responses to the open-ended post-survey

Table 3 Session Attendance Frequency

Sessions Attended	Frequency	Percentage
1	35	6.22%
2	23	4.09%
3	26	4.62%
4	40	7.11%
5	244	43.41%
6	194	34.52%
Total	**562**	**100.0**

Table 4 Pre-Intervention Mental Health and Wellbeing by Completion Status

Measure	Completed Program		Did Not Complete Program		$F(1, 677)$	p	η^2_p
	M	*SD*	*M*	*SD*			
CESD-R10 (Depression)	9.59	6.10	10.51	6.21	3.29	.07	.01
GAD-7 (Anxiety)	6.49	4.99	7.22	5.64	2.85	.09	.00
CD-RISC2 (Resilience)	5.59	1.67	5.06	1.89	13.26	< .001	.02
YQOL-SF (Youth Quality of Life)	73.25	17.48	69.72	19.67	5.54	.02	.01

question *"What kept you in the program over the weeks? Why did you choose to stick with it and complete it?"* were examined (see Table 5). The most frequently mentioned topics were that the content was useful and/or relevant (43% of responses), an external incentive such as the stipend for participating (18%), and that the program was fun or interesting (11% of responses). Respondents also mentioned the opportunity for group discussion (9% of responses) and the supportive environment (9%).

3.2 Thrive Program Impact

The next set of analyses examined the impact of the Thrive program on youth mental health and wellbeing. A series of repeated measures analyses of variance were conducted with wellbeing measures as the dependent variables with time as the within-subjects factor (pre- and post-intervention) and gender, race, and grade as between subjects factors. Dependent variables were depression symptoms, anxiety symptoms, resilience, and youth quality of life. A sensitivity power analysis was conducted with G*Power 3 (Faul et al., 2007) to determine the minimum effect sizes that the study was adequately powered to detect. A sensitivity power analysis indicated that the sample size of 442 participants, with $\alpha = 0.05$ and power $(1 - \beta) = 0.80$, allowed detection of small effects of $f = 0.065$ (equivalent to partial $\eta^2 = 0.004$). Sensitivity analyses were also conducted for interactions between time and the between-subjects factors of gender (4 categories), race (2 categories), and grade (3 levels). These analyses indicated that the study was sufficiently powered to detect small-to-medium interaction effects of $f = 0.18$ (partial $\eta^2 = 0.0075$). These estimates suggest the study was appropriately powered to detect small changes in mental health outcomes over time, as well as differential patterns of change across demographic subgroups.

These analyses demonstrated main effects of the intervention on depression, anxiety and quality of life. Specifically, depression and anxiety significantly decreased, and youth quality of life significantly increased from pre- to post-intervention. Resilience did not change significantly (see Table 6).

There were significant main effects of gender on wellbeing for all dependent variables. Specifically, there was a main effect of gender on depression, $F(3,442) = 9.37$, $p. < 0.001$, $\eta^2_{p=} 0.06$ such that transgender ($M = 14.88$, $SD = 7.81$) and nonbinary youth ($M = 11.55$, $SD = 6.49$) scored higher

Table 5 Program Completion Feedback Frequency – *"What kept you in the program?"*

Response	*N* = 364	*Percentage*	*Sample Quote*
Content was useful or relevant	156	42.9%	"I enjoyed learning the lessons and it helped me a bit with the things in my life. It has definitely motivated me to work towards my goals and use my strengths. I think that it has also made me consider the way that I carry my conversations and has inspired me to meditate. I liked how all of the things we learned/discussed were tangible things that I could do in order to improve my life."
External Incentive—$80 Stipend	65	17.9%	"I stuck with it because I knew I would get the money."
The program was fun or interesting	41	11.3%	"It was just a fun thing to do."
Supportive Environment	34	9.3%	"Everyone in the program was very kind and inviting each session, especially the first session, and that made me feel a sense of belonging very quickly. I also felt I had built a connection with each participant and facilitator very quickly even in the first session."
Group Discussion/Interaction	31	8.5%	"I looked forward to going to the group because I could talk and take a moment to listen. It gave me a different point of view and I enjoyed it."
Parent or Teacher	18	4.9%	"I was doing this at first because my mom told me to, but it grew on me over time."
Made a Commitment	7	1.9%	"I like finishing stuff I started."

Table 6 Intervention Effects on Mental Health and Wellbeing by Child Grade Group

Measure	Pre-Test *M*(*SD*)			Post-Test *M*(*SD*)			*Intervention Effect* $F(1, 442)$	p	η^2_p
	Middle School N = 173	*Junior High N = 151*	*High School N = 110*	*Middle School*	*Junior High*	*High School*			
CESD-R10 (Depression)	8.34(5.29)	9.53(6.31)	11.01(6.37)	6.82 (4.59)	7.70(5.19)	8.41(5.03)	13.79	< .001	.03
GAD-7 (Anxiety)	5.68(2.57)	6.43(5.14)	7.33(5.00)	4.25(4.33)	4.80(4.51)	5.78(4.55)	11.21	< .001	.03
CD-RISC2 (Resilience)	5.72(1.58)	5.65(1.67)	5.46(1.68)	6.12(1.42)	6.11(1.59)	5.83(1.52)	1.82	.18	.00
YQOL-SF (Youth Quality of Life)	76.73(17.13)	73.19(17.07)	69.90(16.62)	79.78(17.25)	76.97(15.96)	74.78(16.12)	10.36	.001	.02

on depression than males ($M = 6.31$, $SD = 4.37$) and females ($M = 7.99$, $SD = 4.84$), at the pre-test and at the post-test (transgender youth $M = 14.87$, $SD = 7.16$; nonbinary youth $M = 11.55$, $SD = 6.49$; female $M = 7.98$, SD = 4.99; male = 6.31, SD = 4.37). Similarly, there was a main effect of gender on anxiety, $F(3,442) = 36.35$, $p < 0.001$, $\eta^{2}_{p=}$ 0.04, such that females ($M = 7.07$, $SD = 4.99$) and males ($M = 5.09$, $SD = 4.47$) were lower than transgender ($M = 9.50$, $SD = 6.09$) and nonbinary youth ($M = 8.64$, $SD = 4.72$) at the pre-test and post-test (nonbinary youth $M = 9.50$, $SD = 6.09$; transgender youth $M = 9.88$, $SD = 5.00$; females $M = 5.51$, $SD = 4.58$; males $M = 3.51$, $SD = 3.88$). There was a main effect of gender on quality of life, $F(3,442) = 8.89$, *p. < 0.001,* $\eta^{2}_{p =}$ *0.06* such that transgender ($M = 45.67$, $SD = 17.58$) and nonbinary youth ($M = 62.85$, $SD = 15.67$) scored lower on quality of life than males (M = 77.66, SD = 15.68) and females ($M = 72.39$, $SD = 17.09$), at the pre-test and at the post-test (transgender youth $M = 54.67$, $SD = 20.38$; nonbinary youth $M = 65.39$, $SD = 18.01$; female $M = 75.45$, $SD = 16.91$; male $M = 82.27$, $SD = 14.17$). The main effect of gender on resilience was significant, $F(3,425) = 3.56$, p = 0.01,, $\eta^{2}_{p =}$ *0.02* such that males ($M = 6.01$, $SD = 1.50$) scored higher than females ($M = 5.34$, $SD = 1.67$), transgender ($M = 5.63$, $SD = 2.13$), and nonbinary ($M = 5.10$, $SD = 1.29$) youth at the pretest and posttest, (posttest males $M = 6.31$, $SD = 1.36$; females $M = 5.88$, $SD = 1.55$; transgender $M = 5.25$, $SD = 2.05$; nonbinary $M = 5.90$, $SD = 1.79$).

There was a main effect of grade on depression symptoms, $F(2,442) = 3.52$, $p = 0.03$, $\eta^2 p = 0.02$ (see Table 6). Youth in middle school showed lower levels of depressive symptoms both before the intervention than youth in junior high school and high school and after the intervention. Similarly, there was a main effect of grade on anxiety, $F(2, 442) = 2.98$, p = 0.05, $\eta^{2}_{p} = 0.01$. Youth in middle school showed lower levels of anxiety than youth in junior high school and high school (see Table 4).

There were no main effects of race/ethnicity on youth wellbeing measures. More specifically, the main effect of race/ethnicity on depression was not significant, $F(1, 442) = 0.10$, $p = 0.76$, $\eta^2 p = 0.00$. The main effect of race/ethnicity on anxiety was not significant, F(1, 442) = 0.39, $p = 0.91$, $\eta^2 p = 0.00$. The main effect of race/ethnicity on youth quality of life was not significant, $F(1, 442) = 0.81$, $p = 0.37$, $\eta^2 p = 0.00$.

The interactions between time and race/ethnicity were not significant for depression, $F(1,442) = 1.17$, p = 0.28, $\eta^2 p = 0.00$, indicating that depression did not change more for students of color vs. white, non-Latino students. There was a significant interaction between time and race/ethnicity for anxiety, indicating that students of color showed a greater reduction in anxiety than white, non-Latino students, $F(1, 442) = 52.51$, $p = 0.02$, $\eta^2 p = 0.01$, see Fig. 2. The interaction between time and race was not significant for youth quality of life, indicating that quality of life did not change more for students of color relative to white, non-Latino students, $F(1,442) = 0.72$, p = 0.40, $\eta^2 p = 0.00$. The time by race interaction for resilience was not significant, $F(1,442) = 0.19$, p = 0.83, $\eta^2 p = 0.00$.

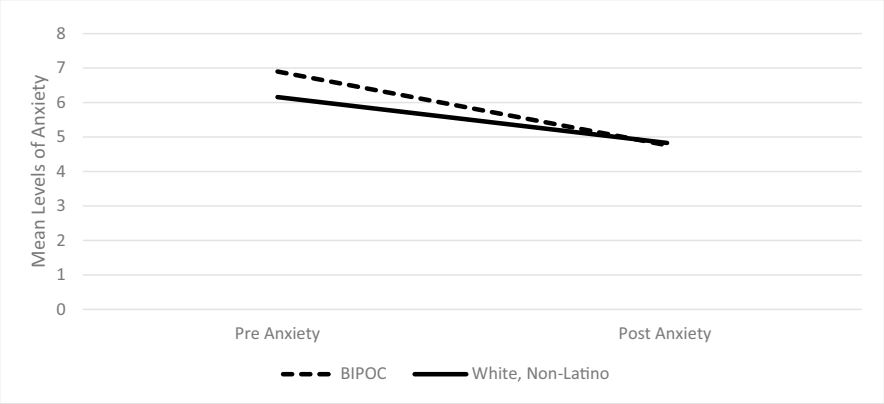

Fig. 2 Interaction between Intervention (Pre- and Post-) and Race/Ethnicity on Anxiety

None of the interactions between time and gender, or time and grade were significant, indicating that the effects of the intervention did not differ by gender or grade, *p* values ranged from 0.10 to 0.86.

3.3 Acceptability for Adolescent Programming Needs

The next set of analyses examined adolescents' perceptions of the acceptability of the program and whether they perceived the program as creating a supportive emotional climate. Responses to two of the open-ended survey questions were analyzed: one that requested positive feedback (*"What did you like most about the program and why?")* and another that requested areas for improvement (*"What, if anything, could we improve about the program, and why?")* (see Tables 7 & 8). Some responses were more detailed and included multiple topics. The most frequently mentioned positive feedback topics were the useful/relevant content (43%), the opportunity for group discussion/interaction (28%), and the supportive environment (23%) (see Table 7). The most frequently mentioned areas for improvement were nothing (57%) and a greater variety in activities/more opportunities for engagement (12%).

The last analysis determined whether Thrive meets the programming needs of adolescents by examining how the Thrive program aligns with the SAFE (Sequenced, Active, Focused, and Explicit) guidelines. The Thrive program is 'Sequenced' throughout the entire program as well as within each individual lesson. The program begins with an introduction lesson on wellbeing and a very simple gratitude practice and grows more complex as the program continues, covering topics such as goals and negative thinking traps. As participants become more familiar with the format of the program, and their peers and facilitators, they can address and learn about more complicated material. Within each weekly lesson there is also a sequenced format. Each week, the lesson begins with a wellbeing check in and gratitude from each participant, followed by introduction of the day's topic done

Table 7 Positive Program Feedback Frequency—*"What did you like most about the program and why?"*

Response	*N* = 711	*Percentage*	*Sample Quote*
Content was useful or relevant	308	43.3%	"How it taught me how to think differently if someone says something then Instead of saying I made them mad then I can say they might be having a hard day."
Specific content: coping with stress, anxiety, emotion regulation was helpful	62	8.7%	"I liked how we learned about stress and depression. It tells you how to manage your mental health."
Specific content: mindfulness/meditation	51	7.2%	"I liked the meditation because it made me feel good and grounded."
Group Discussion/Interaction	196	27.6%	"I looked forward to going to the group because I could talk and take a moment to listen. It gave me a different point of view and I enjoyed it."
Supportive Environment	161	22.6%	"Everyone in the program was very kind and inviting each session, especially the first session, and that made me feel a sense of belonging very quickly. I also felt I had built a connection with each participant and facilitator very quickly even in the first session
External Incentive such as $80 Stipend	21	3%	"I liked the feeling of getting $80 because I like money"

Note: Participants sometimes gave multiple responses

Table 8 Program Improvement Feedback Frequency – *"What, if anything, could we improve about the program, and why?"*

Response	*N* = 545	*Percentage*	
Nothing	312	53.0%	"Nothing. Everything was amazing."
Greater variety in activities/more opportunity for engagement	67	12.3%	"Make more group activities where the participants work together or something like that"
Scheduling/Logistics	55	10.1%	"Maybe make it longer"
Curriculum/Content	38	7%	"I think that having a minute off being silent and still at the beginning would help students be more in the moment."
More discussion opportunities	19	3.5%	"Promote more speaking and discussion from the kids"
Technology Issues	15	2.8%	"Zoom isn't the best video chat software, so maybe a different Zoom-ish thing."
Greater sense of belonging	13	2.4%	"Just want to say that I felt a bit out of the group since I was the only Latina"
I don't know	15	2.7%	"not sure"
Offer in-person meetings	11	2.0%	"If there could be an in-person option."

through lecture and videos. Later in the lesson there is time for practice, discussion, and reflection.

Active learning involves the opportunity to practice or rehearse what was taught. This behavior helps participants achieve mastery of a topic or technique with more success than with instruction alone (Durlak et al., 2010). Each wellbeing lesson is structured around introducing and providing information on the benefits of a topic and allowing time for practice and reflection, which means the program meets the 'Active' guideline. A gratitude practice is introduced during the first week of the program and participants repeat it weekly on their own time throughout the course of the program. The final week of the program covers meditation and mindfulness, and participants complete a 10-min guided meditation together. Positive psychology interventions were practiced both in weekly sessions as well through individual homework sessions. The combination of individual and structured group practice allows participants to become comfortable with these interventions and increases the likelihood they would continue individual practice after the six-week program's end.

The Thrive Program curriculum includes several personal and social skills. Personal skills covered include identifying and using character strengths, evaluating goals, and practicing mindfulness. The social skills covered focused on positive relationships, including active listening and responding effectively. In addition to being 'Sequenced' and 'Active', the Thrive program appears to meet the 'Focused' and 'Explicit' guidelines.

4 Discussion

This study evaluated the acceptability, feasibility, and impact of Thrive, a multicomponent prevention and promotion program aimed at improving youth mental health and well-being. Adapted from a well-being program for adults, this marks the first application and adaptation of ENHNACE in a youth population. The program was assessed for its feasibility, its impact on participants' mental health and well-being, and its acceptability to adolescents. Results demonstrated significant reductions in depression and anxiety symptoms and notable improvements in quality of life among participants who completed the program. Participants particularly valued the evidence-based content delivered in a supportive environment and highlighted the group discussions as a highly effective and enjoyable element. These findings underscore the importance of fostering peer connection and shared experiences in adolescent mental health interventions, positioning Thrive as a promising approach to promoting well-being in this demographic.

The rate of attrition for the Thrive program was 25%, comparable to the 31% attrition rate observed in the adult ENHANCE program. This figure is comparable or lower than the rates reported in some youth mental health interventions. A meta-analysis of online promotion and prevention programs for youth found that on average participants completed half of the modules and over half of the studies showed attrition rates of 20% or higher (Clarke et al., 2015). Another meta-analysis found that overall attrition rates ranged between 0 and 58%, with a mean of 25% (Wright

et al., 2023). A study examining attrition trends among youth with significant anxiety symptoms receiving mental health services found a 51% attrition rate, consistent with other studies that report rates ranging from 50 −75% range (Gonzalez et al., 2011). Predictors of attrition in that study included depression symptoms and racial/ethnic minority status, patterns that align with findings from the current study (Gonzalez et al., 2011). Non-white and high school participants were overrepresented in the non-completer group, as were those with lower resilience and quality of life at the pre-test, suggesting that program completion was more challenging for these subgroups. The 2021 Student Health and Risk Prevention Survey emphasizes cultural competence as a cornerstone of effective prevention programs. Culturally competent interventions address the unique issues and experiences of diverse populations, facilitating communication and engagement across different backgrounds. The current program provided documentation in Spanish, was free, and offered varied meeting times in order to meet the needs of diverse students. Nonetheless, the higher attrition rate among nonwhite participants in the Thrive program highlights the need to identify and address specific barriers faced by youth of color. Tailoring outreach, program design, and facilitation strategies to better meet the needs of diverse participants could improve retention and ensure more equitable access to the program's benefits.

Several alterations were made to ENHANCE to create Thrive and make program completion more feasible for adolescents. Key changes included the addition of a psychoeducation peer support group, an app for practicing skills and a more condensed format, with six one-hour sessions replacing ENHANCE's 12 two-hour sessions. Additionally, several new exercises were added to the curriculum. Lastly, the existing curriculum language was adapted to meet middle and high school reading levels. The results demonstrated a positive impact of the Thrive program on youth mental health and wellbeing, reducing depression and anxiety symptoms and improving quality of life. At the pre-intervention stage, participants had an average score close to 10 on the CESD-R10 depression measure, indicating levels of depression close to clinical levels of depression. After completing the program, average depression levels fell below 10, suggesting that participants were no longer considered depressed.

Thrive is a multicomponent positive psychology intervention (MPPI), addressing multiple wellbeing related topics (e.g., gratitude, character strengths) and draws its evidence-based curriculum from the areas of positive psychology, cognitive behavioral therapy, and mindfulness. Research has found that implementing MPPIs along with other evidence based positive interventions leads to larger effect sizes as far as increased wellbeing and reduced depression and anxiety symptoms (Tejada-Gallardo et al., 2020). Targeting multiple domains of wellbeing and positive functioning can increase synergy between activities and amplify effects. Thrive's combination of group instruction, peer discussion, and individual homework prompts allows participants to connect with wellbeing topics in a variety of ways and utilize the elements that were personally valuable and impactful.

Results indicated that youth of color showed a larger decrease in anxiety from pre- to post-test than did white youth. Males, on average, experienced lower levels of anxiety, depression, and higher levels of resilience and quality of life, both

pre and post-intervention, than female and non-cisgender participants. These findings are consistent with previous research demonstrating that girls from racial/ethnic minorities were at the greatest risk for depression (Patil et al., 2018), girls experience a higher emotional difficulty level and a lower subjective wellbeing level than boys (Yoon et al., 2022), and LGBTQ youth experience poorer mental health than their cisgender and heterosexual peers (Gattamorta et al., 2019). Thrive's participants were primarily female, supporting Haavik et al's (2019) findings that females are more likely to seek mental health resources and treatment than males.

Adolescents have unique needs when it comes to mental health programming. The most effective programs for this age group create a supportive emotional climate that promotes positive mindsets and coping mechanisms while aligning adult-endorsed healthy behaviors with peer-approved sources of status and respect (Yeager, 2017). In the current study, the three most frequently cited benefits—group discussions, a supportive environment, and useful/relevant content—suggest that Thrive successfully fostered the desired supportive emotional climate. Participants valued the evidence-based topics and strategies provided by facilitators, and the group discussions allowed them to connect with peers facing similar life experiences and challenges, enhancing the program's relevance and impact.

The popularity of telehealth services has risen sharply since the COVID-19 pandemic, and research indicates that the efficacy of online mental health interventions is comparable to in-person programs in terms of both assessment and treatment (Shikegawa et al., 2018). While a few participants suggested offering the program in-person rather than via Zoom, the online format of Thrive provides unique advantages for youth. Adolescents, as digital natives, may find online platforms engaging and accessible. Additionally, the virtual delivery format supports affordable scalability and extends the program's reach to underserved populations, including low-income participants (Heintzelman et al., 2020). Logistical barriers are another consideration. Many youth lack reliable after-school transportation, and parents may not be available to drive their children to and from a program, especially one lasting only an hour. The online format eliminates the need for travel, providing greater flexibility and accessibility for participants and their families.

While our study was conducted in the U.S., the foundational components of Thrive—positive psychology, cognitive behavioral therapy, and mindfulness—have international evidence bases and cross-cultural applicability (Goldberg et al., 2022; Hendricks et al., 2018; Ng & Wong, 2018). However, effective implementation in other countries would require cultural and contextual adaptation, particularly in terms of language, examples used, facilitation style, and other cultural content. Potential barriers include varying levels of mental health literacy, access to reliable technology for virtual delivery, and facilitator recruitment and training. Additional challenges include stigma, as in some contexts, openly discussing mental health and wellbeing may be viewed as shameful or a sign of personal weakness, which could hinder participation and engagement with the program (Ahad et al., 2023). Future research should explore culturally informed adaptations to assess the feasibility, acceptability, and effectiveness across diverse global settings.

Programs that follow SAFE (Sequenced, Active, Focused, and Explicit) guidelines were found to be more effective in enhancing the personal and social skills of

children and adolescents than programs that did not adhere to these guidelines (Durlak et al., 2010). Thrive's sequenced lesson format and increasingly complex weekly topics, opportunity for practice and rehearsal of strategies covered, and specific personal and social skills covered mean that the program meets SAFE guidelines. Learning style differs by individual, but evidence points to active forms of learning as the most effective for the largest number of youth. Providing basic instruction followed by the opportunity for practice is an effective strategy that can lead to behavioral changes. Thrive participants also had the opportunity to practice skills on their own time through instructional prompts and videos in the app and were then given the chance to reflect on and evaluate this practice through group discussion during the weekly sessions. Explicit objectives and expectations on program content allow youth participants to have a concrete sense of what a program will provide them and what they will take away from it. By following SAFE guidelines, Thrive provides its adolescent participants with a clear picture of what the program entails and straightforward, easy to implement strategies to improve their mental health and wellbeing.

4.1 Limitations and Future Research

Attrition in this program was notable, with one-quarter of participants not completing. High attrition rates are common in online mental health interventions, which can lose up to two-thirds of participants compared to lower rates typically seen in in-person programs (Heintzelman et al., 2020). While response to open-ended survey questions were overwhelmingly positive, these results are likely biased, reflecting feedback primarily from participants for whom the program was most feasible and effective. Although the survey provided valuable insights into what worked well for those who completed the program, it highlights a critical gap in terms of the lack of data on the factors contributing to participant non-completion. Addressing this gap could involve implementing outreach to non-completers to gather feedback. While response rates may be low, such an effort could yield actionable insights for improving program accessibility and retention.

A key limitation in the literature on adolescent mental health interventions is the lack of longitudinal data on program effectiveness (Helms et al., 2021). Many studies on multicomponent positive psychology interventions gather follow-up data only immediately after program completion. Those that do include long-term data often find that intervention effects diminish over time (Tejada-Gallardo et al., 2020). ENHANCE, the program on which Thrive is based, collected follow-up data both immediately after the program and three months later. While positive affect declined somewhat between the posttest and the three-month follow-up, it remained higher than pretest levels, and life satisfaction gains were sustained (Heintzelman et al., 2020). Thrive participants frequently cited group discussions and the program's supportive environment as its most valuable components, yet these aspects are unavailable after the program ends. Incorporating a three-month follow-up survey would provide essential data on Thrive's longer-term impact.

Another area for improvement is study design. A randomized controlled trial (RCT) would strengthen confidence in the program's outcomes by reducing bias and

establishing a clearer causal link between the intervention and its effects. While results indicate that the Thrive program may have a significant positive impact on youth mental health and wellbeing, the absence of a control group limits the ability to draw causal conclusions about the effectiveness of the program. It is possible that the observed improvements in depression, anxiety, and youth quality of life were influenced by factors other than the intervention itself. For example, participation in a supportive group setting may have conferred mental health benefits independent of the program content, particularly during the early phases of the study when the social isolation associated with the COVID-19 pandemic was more pronounced. The structure and consistency of the weekly meetings, along with opportunities for peer connection and facilitator support, may have created a therapeutic context that enhanced well-being regardless of specific curriculum components. Future research should incorporate a randomized controlled design with an active comparison group (e.g., a group that meets weekly but does not receive structured mental health content) to better isolate the unique contributions of the Thrive intervention and assess whether the observed gains are attributable to program-specific mechanisms or to more general group engagement effects.

Finally, demographic data collection was limited to youth grade, gender identity and race/ethnicity. Expanding this to include variables such as age, family income, and sexual orientation would enable a more nuanced analysis of the program's feasibility and effectiveness for different populations. Identifying which groups benefit most could inform strategies to enhance program inclusivity and scalability.

5 Conclusion

The Thrive program demonstrated positive impacts on youth mental health and wellbeing, with significant reductions in depression and anxiety symptoms, as well as notable improvements in youth quality of life. The program experienced an attrition rate of 25%, indicating that while feasible for many participants, barriers to completion existed for others. Attrition was disproportionately higher among nonwhite students, highlighting a need for greater inclusivity and accessibility. Despite these challenges, the program effectively implemented SAFE (sequenced, active, focused, and explicit) principles, fostering an emotionally supportive climate where participants felt comfortable sharing and learning. To enhance the program's effectiveness and scalability, future efforts should focus on outreach to non-completers and implement a three-month post-intervention follow-up in a randomized controlled trial. These steps will help refine the program to ensure it becomes a sustainable and impactful long-term mental health intervention.

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Author Contributions SS, MD, and AB conceptualized the study. SS and MD analyzed the data and wrote the main manuscript text. All authors reviewed the manuscript.

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Data Availability The data are not publicly accessible. The data are not publicly available due to their containing information that could compromise the privacy of research participants. The IRB required data to be viewed only by the research team. Participants did not provide consent for their data to be shared.

Declarations

Ethical Approval The study was approved by the Internal Review Board of the University of Utah (# IRB_00140200).

Informed Consent Parents provided written permission for their children to participate. Youth provided written assent.

Competing interest Alexander Becraft is an executive of the WeBeWell organization and, as a result, has a conflict of interest. The University of Utah's Conflict of Interest Office and the Institutional Review Board have reviewed, managed, and approved this conflict of interest.

References

Ahad, A. A., Sanchez-Gonzalez, M., & Junquera, P. (2023). Understanding and Addressing Mental Health Stigma Across Cultures for Improving Psychiatric Care: A Narrative Review. *Cureus, 15*(5), e39549. https://doi.org/10.7759/cureus.39549

American Psychological Association. (n.d.) *What is Cognitive Behavioral Therapy?* https://www.apa.org/ptsd-guideline/patients-and-families/cognitive-behavioral.pdf

Bailey, R., Stickle, L., Brion-Meisels, G., & Jones, S. M. (2019). Re-imagining social-emotional learning. *Phi Delta Kappan, 100*(5), 53–58. https://doi.org/10.1177/0031721719827549

Centers for Disease Control and Prevention. Youth Risk Behavior Survey: Data Summary and Trends Report, 2011-2021. (2023). https://www.cdc.gov/healthyyouth/data/yrbs/pdf/YRBS_Data-Summary-Trends_Report2023_508

Carsley, D., Khoury, B., & Heath, N. L. (2018). Effectiveness of Mindfulness Interventions for Mental Health in Schools: A Comprehensive Meta-analysis. *Mindfulness, 9*, 693–707. https://doi.org/10.1007/s12671-017-0839-2

Clarke, A. M., Kuosmanen, T., & Barry, M. M. (2015). A systematic review of online youth mental health promotion and prevention programs. *Journal of Youth and Adolescence, 44*, 90–113. https://doi.org/10.1007/s10964-014-0165-0

Durlak, J. A., Weissberg, R. P., & Pachan, M. (2010). A Meta-Analysis of After-School Programs That Seek to Promote Personal and Social Skills in Children and Adolescents. *American Journal of Community Psychology, 45*(3–4), 294–309. https://doi.org/10.1007/s10464-010-9300-6

Edwards, M., Sundar, P., Brown, J., & Summers, N. (2020). Virtual group therapy: Evidence summary for child and youth mental health service providers. *Ontario Centre of Excellence for Child and Youth Mental Health* https://km4s.ca/publication/virtual-group-therapy-evidence-summary-for-child-and-youth-mental-health-service-providers-2020/

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*, 175–191. https://doi.org/10.3758/BF03193146

Gattamorta, K. A., Salerno, J. P., & Castro, A. J. (2019). Intersectionality and Health Behaviors Among US High School Students: Examining Race/Ethnicity, Sexual Identity, and Sex. *The Journal of School Health, 89*(10), 800–808. https://doi.org/10.1111/josh.12817

Goldberg, S. B., Riordan, K. M., Sun, S., & Davidson, R. J. (2022). The Empirical Status of Mindfulness-Based Interventions: A Systematic Review of 44 Meta-Analyses of Randomized Controlled Trials. *Perspectives on Psychological Science, 17*(1), 108–130. https://doi.org/10.1177/1745691620968771

Gonzalez, A., Weersing, V. R., Warnick, E. M., Scahill, L. D., & Woolston, J. L. (2011). Predictors of Treatment Attrition Among an Outpatient Clinic Sample of Youths With Clinically Significant Anxiety. *Administration and Policy in Mental Health and Mental Health Services Research, 38*(5), 356–367. https://doi.org/10.1007/s10488-010-0323-y

González-Carrasco, M., Casas, F., Malo, S., Viñas, F., & Dinisman, T. (2017). Changes with age in subjective well-being through the adolescent years: Differences by gender. *Journal of Happiness Studies, 18*(1), 63–88. https://doi.org/10.1007/s10902-016-9717-1

Haavik, L., Joa, I., Hatloy, K., Stain, H. J., & Langeveld, J. (2019). Help seeking for mental health problems in an adolescent population: The effect of gender. *Journal of Mental Health, 28*(5), 467–474. https://doi.org/10.1080/09638237.2017.1340630

Heintzelman, S., Kushlev, K., Lutes, L. D., Wirtz, D., Kanippayoor, J. M., Leitner, D., Oishi, S., & Diener, E. (2020). ENHANCE: Evidence for the Efficacy of a Comprehensive Intervention Program to Promote Subjective Well-Being. *Journal of Experimental Psychology: Applied, 26*(2), 360–383. https://doi.org/10.1037/xap0000254

Helms, R., Fukkink, R., van Driel, K., & Vorst, H. C. (2021). Benefits of an out-of-school time program on social-emotional learning among disadvantaged adolescent youth: A retrospective analysis. *Children and Youth Services Review, 131*, 106262. https://doi.org/10.1016/j.childyouth.2021.106262

Hendricks, T., Schotanus-Dijkstra, M., Hassankhan, A., Graafsma, T.G.T., Bohlmeijer, E., Jong, J. (2018). The efficacy of positive psychological interventions from non-western countries: A systematic review and meta-analysis. *International Journal of Wellbeing, 8*(1). https://doi.org/10.5502/ijw.v8i1.711

Jones, S.M., Bailey, R., Brush, K., & Kahn, J. (2017). Social and Emotional Learning Out-of-School Time Settings. *Harvard Graduate School of Education.*

Kushlev, K., Heintzelman, S. J., Lutes, L. D., Wirtz, D., Kanippayoor, J. M., Leitner, D., & Diener, E. (2020). Does happiness improve health? Evidence from a randomized controlled trial. *Psychological Science, 31*, 801–821. https://doi.org/10.1177/0956797620919673

Kushlev, K., Heintzelman, S.J., Lutes, L.D., Wirtz, D., Oishi, S., & Diener, E. (2017). ENHANCE: Design and rationale of a randomized controlled trial for promoting enduring happiness & well-being. *Contemporary Clinical Trials, 52*, 62–74. https://doi.org/10.1016/j.cct.2016.11.003

Lehtimaki, S., Martic, J., Wahl, B., Foster, K. T., & Schwalbe, N. (2021). Evidence on Digital Mental Health Interventions for Adolescents and Young People: Systematic Overview. *JMIR Mental Health, 8*(4), e25847–e25847. https://doi.org/10.2196/25847

Lendrum, A., Humphrey, N., & Wigelsworth, M. (2013). Social and emotional aspects of learning (SEAL) for secondary schools: Implementation difficulties and their implications for school-based mental health promotion. *Child and Adolescent Mental Health, 18*(3), 158–164. https://doi.org/10.1111/camh.12006

Li, J., Xu, C., Wan, K., Liu, Y., & Liu, L. (2023). Mindfulness-based interventions to reduce anxiety among Chinese college students: A systematic review and meta-analysis. *Frontiers in Psychology, 13*, 1031398. https://doi.org/10.3389/fpsyg.2022.1031398

Ng, T. K., & Wong, D. F. K. (2018). The efficacy of cognitive behavioral therapy for Chinese people: A meta-analysis. *The Australian and New Zealand Journal of Psychiatry, 52*(7), 620–637. https://doi.org/10.1177/0004867417741555

Olsson, C. A., McGee, R., Nada-Raja, S., & Williams, S. M. (2013). A 32-Year Longitudinal Study of Child and Adolescent Pathways to Well-Being in Adulthood. *Journal of Happiness Studies, 14*, 1069–1083. https://doi.org/10.1007/s10902-012-9369-8

O'Reilly, M., Svirydzenka, N., Adams, S., & Dogra, N. (2018). Review of mental health promotion interventions in schools. *Social Psychiatry and Psychiatric Epidemiology, 53*(7), 647–662. https://doi.org/10.1007/s00127-018-1530-1

Owens, R., & Waters, L. (2020). What does positive psychology tell us about early intervention and prevention with children and adolescents? A review of positive psychological interventions with young people. *The Journal of Positive Psychology, 15*(5), 588–597. https://doi.org/10.1080/17439760.2020.1789706

Patil, P. A., Porche, M. V., Shippen, N. A., Dallenbach, N. T., & Fortuna, L. R. (2018). Which girls, which boys? The intersectional risk for depression by race and ethnicity, and gender in the U.S. *Clinical Psychology Review, 66*, 51–68. https://doi.org/10.1016/j.cpr.2017.12.003

Patrick, D. L., Edwards, T. C., & Topolski, T. D. (2002). Adolescent quality of life, Part II: Initial validation of a new instrument. *Journal of Adolescence, 25*(3), 287–300. https://doi.org/10.1006/jado.2002.0471

Peterson, C., & Seligman, M. E. P. (2004). *Character Strengths and Virtues: A Handbook and Classification.* New York: Oxford University Press and Washington, DC: American Psychological Association.

Racine, N., McArthur, B. A., Cooke, J. E., Eirich, R., Zhu, J., & Madigan, S. (2021). Global Prevalence of Depressive and Anxiety Symptoms in Children and Adolescents During COVID-19: A Meta-analysis. *JAMA Pediatrics, 175*(11), 1142–1150. https://doi.org/10.1001/jamapediatrics.2021.2482

Radloff, L. S. (1977). CES-D scale: A self-report depression scale for research in the general populations. *Applied Psychological Measurement, 1*, 385–401.

Ramey, C. T., & Ramey, S. L. (2004). Early learning and school readiness: Can early intervention make a difference? *Merrill Palmer Quarterly, 50*(4), 471–491. https://doi.org/10.1353/mpq.2004.0034

Reangsing, C., Punsuwun, S., & Schneider, J. K. (2021). Effects of mindfulness interventions on depressive symptoms in adolescents: A meta-analysis. *International Journal of Nursing Studies, 115*, 103848. https://doi.org/10.1016/j.ijnurstu.2020.103848

Shigekawa, E., Fix, M., Corbett, G., Roby, D. H., & Coffman, J. (2018). The current State of telehealth evidence: a rapid review. *Health Affairs, 37*(12), 1975–1982. https://doi.org/10.1377/hlthaff.2018.05132

Student Health And Risk Prevention: Prevention Needs Assessment Survey. (2021). *State of Utah Department of Human Services: Division of Substance Abuse and Mental Health.* https://dsamhtraining.utah.gov/_documents/SHARPreports/2021/StateofUtahProfileReport.pdf

Tejada-Gallardo, C., Blasco-Belled, A., Torrelles-Nadal, C., & Alsinet, C. (2020). Effects of school-based multicomponent positive psychology interventions on well-being and distress in adolescents: A systematic review and meta-analysis. *Journal of Youth and Adolescence, 49*(10), 1943–1960. https://doi.org/10.1007/s10964-020-01289-9

Teodorczuk, Guse, T., & du Plessis, G. A. (2019). The effect of positive psychology interventions on hope and well-being of adolescents living in a child and youth care centre. *British Journal of Guidance & Counselling, 47*(2), 234–245. https://doi.org/10.1080/03069885.2018.1504880

Vaishnavi, S., Connor, K., & Davidson, J. R. (2007). An abbreviated version of the Connor-Davidson Resilience Scale (CD-RISC), the CD-RISC2: Psychometric properties and applications in psychopharmacological trials. *Psychiatry Research, 152*(2–3), 293–297. https://doi.org/10.1016/j.psychres.2007.01.006

Vostanis, P., Humphrey, N., Fitzgerald-Yau, N., & Wolpert, M. (2013). How do schools promote emotional well-being among their pupils? Findings from a national scoping survey of mental health provision in English schools. *Child and Adolescent Mental Health, 18*(3), 151–157. https://doi.org/10.1111/j.1475-3588.2012.00677.x

Weinberg, H. (2020). Online group psychotherapy: Challenges and possibilities during COVID-19 – a practice review. *Group Dynamics: Theory, Research, and Practice, 24*, 201–211. https://doi.org/10.1037/gdn0000140

Weissberg, R., & O'Brien, M. U. (2004). What works in school-based social and emotional learning programs for positive youth development. *The Annals of the American Academy of Political and Social Science, 591*(1), 86–97. https://doi.org/10.1177/0002716203260093

Williams, N. (2014). Review of the test *Generalized Anxiety Disorder (GAD-7) Questionnaire,* by R. *L. Spitzer. Occupational Medicine, 64*(3), 224. https://doi.org/10.1093/occmed/kqt161

World Health Organization (2024). Mental Health of Adolescents. Factsheets. Retrieved 5/6/2025 from https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health

Wright, M., Reitegger, F., Cela, H., Papst, A., & Gasteiger-Klicpera, B. (2023). Interventions with digital tools for mental health promotion among 11–18 Year Olds: A systematic review and meta-analysis. *Journal of Youth and Adolescence, 52*, 754–779. https://doi.org/10.1007/s10964-023-01735-4

Yeager, D. (2017). Social and Emotional Learning Programs for Adolescents. *The Future of Children, 27*(1), 73–94. https://doi.org/10.1353/foc.2017.0004

Yoon, Eisenstadt, M., Lereya, S. T., & Deighton, J. (2022). Gender difference in the change of adolescents' mental health and subjective wellbeing trajectories. *European Child & Adolescent Psychiatry*, 1–10. https://doi.org/10.1007/s00787-022-01961-4

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