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"Healthy Skills 4 Life" Program: A Pilot Study and Program Evaluation

Wendy Hines
Gardner-Webb University, wlh0208@gardner-webb.edu

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Wendy Hines

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Submitted by:	Approved by:
_____	Kellie M Griggs, DNP, MSN-Ed, RNC-OB
Wendy Hines, MSN, RN	Kellie M Griggs, DNP, MSN-Ed, RNC-OB
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Date	Date

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Abstract

This project piloted and evaluated "The Healthy Skills 4 Life" (HS4L) program within a middle school population. HS4L is an innovative holistic health curriculum focusing on four key areas of healthy behavior: nutrition, physical activity, stress management, and sleep hygiene.

A middle school physical education teacher was supplied with the HS4L instructional materials and support needed to independently implement the program. The HS4L program allowed the students to self-assess wellness behaviors and create an action plan for improvement focusing on healthy lifestyle concepts. The implementation was evaluated utilizing the ″Healthy Skills 4 Life″ Feedback survey. The total average Likert score for the program is 4.93 indicating a successful pilot of the HS4L program. The high average score indicates the participants enjoyed the HS4L program implementation experience and would recommend future offerings. Further, the participants rated the HS4L program as effective with increasing student knowledge of key content areas. Physical education teachers can provide effective instruction to students when supplied with the HS4L holistic health curriculum with minimum formal upstart and support. Findings indicate that the HS4L program offers a way for middle school students to be introduced to holistic health education in an effective and budget-neutral manner.

Key Words

Holistic health education, Middle school population, Healthy behaviors, Lewin's Change Theory

Childhood obesity was not a health concern for most of American history due to the low incidence rate.[1] Children and adolescents' average body mass indexes (BMI) began to rise rapidly in the 1980s.[1] In 1997, the World Health Organization (WHO) declared childhood obesity a global epidemic and a significant healthcare problem.[2] Despite the intense focus on the obesity epidemic by the healthcare community, rates have continued to rise.[3] Currently, 13.7 million children and adolescents in the United States meet the definition of obesity, making it the most common chronic childhood disease.[3]

Research has shown risk factors for developing childhood obesity; however, the actual cause for the rapid rise in the obesity incidence rate has not yet been determined. Risk factors for childhood obesity are often related to the child's parents, including their weight status. A child has a higher risk for obesity if their parents are overweight or obese.[4] In addition, parent's education and income level also play a role, with those from households with lower education and income levels being more at risk for obesity.[4] While risk factors may indicate which populations are most at risk; they are not always predictive. This fact demonstrates how complex the development of obesity can be.[4]

The likely causes of the current obesity trend are shifts in the typical American diet and activity levels.[3] In the 1980s, Americans reduced their overall fat intake and replaced fats with carbohydrates and simple sugars.[3] Also, food serving portions significantly increased during this timeframe, especially within the competitive fast-food market. The race to offer the largest volume of food at the lowest price was a significant factor in increasing portion sizes in the American diet.[3] Further, Americans reduced physical activity levels, which exacerbated the problem with increased caloric intake and led to weight gain. These activities correlate with the rise in average BMI, indicating that the American obesity epidemic is caused by eating too many

calories while not expending enough energy through physical activity.[3] Childhood obesity has been directly linked to the behaviors of low physical exercise, high amounts of television viewing, and low amounts of sleep.[5] These behaviors seem to have more influence on weight status than eating habits, indicating that childhood obesity is linked to modifiable behavior risk factors.

Considering that one of the significant causal factors of childhood obesity is insufficient physical exercise, research has been conducted to support interventions to increase physical activity in children. One method that has been effective in increasing student physical activity levels is mandatory homework assignments within physical education courses.[6,7,8] Mandatory physical education homework for middle school students over six weeks effectively increased the daily step counts for middle school students and decreased screen time.[6] Allowing students to self-select their preferred activity for healthy homework led to greater student satisfaction with the work.[7] The researchers concluded that assigning healthy homework within physical education courses is an intervention that should be included in future school wellness programs.[6,7,8]

Given that dietary intake is a significant contributor to weight status, much research has been conducted on educational interventions. Studies indicate that dietary education interventions effectively modify dietary behaviors within children and adolescents. [6,8,9,10,11] Teacher-led educational lessons improved breakfast consumption on most days of the week (10% increase) and fruit and vegetable consumption significantly as a snack (20% increase).[9] Youth also improved their diet quality (96%) and physical activity practices (65%).[9] Further, teachers reported a high level of satisfaction with supplied health curriculum material and noted that the prepared curriculum was easy to implement. This study demonstrates teachers without a

healthcare background can effectively deliver healthy living education with a supplied curriculum.[10] Interventions delivered within the school environment are effective with middle school students, especially when paired with physical activity components.

The literature indicates the middle school-aged child is receptive to health education concepts. In addition, the middle school age range is the developmental stage in which children develop a greater sense of identity and assume more responsibility for their care and well-being. The development of identity and independence make this age rage ideal for educational interventions on health topics. Further, middle school seems to be the period in which healthy behaviors are adopted or rejected going into adulthood, further making it the ideal time to provide education.

METHODS

A quality improvement, mixed-methods project entitled "Healthy Skills 4 Life" (HS4L), was piloted and evaluated for this study. A middle school physical education teacher was supplied with the HS4L instructional materials and support needed to independently implement the program. The HS4L program allowed the students to self-assess wellness behaviors and create an action plan for improvement focusing on healthy lifestyle concepts. The physical education teacher independently guided the students through the curriculum developed by the project leader. Students focused on their personal health related SMART goals during the last two weeks of the HS4L program. At the conclusion of the HS4L Program, students were encouraged to maintain the healthy skills developed during the invention period.

Description of the Intervention

HS4L is an innovative holistic health curriculum focusing on four key areas of healthy behavior: nutrition, physical activity, stress management, and sleep hygiene. To best achieve

HS4L's aim, students need to identify personal health behaviors that are not optimal and adopt and maintain healthier behaviors long-term. The HS4L program consists of eight 45-minute classroom-based educational modules and supporting interactive assignments. HS4L is designed to support the achievement of the National Health Education Standards (NHES). Each module contained learning objectives on the featured topic, instructional materials for the teacher, interactive classroom activities, closure activities, and homework assignments to encourage student learning outside of class.

HS4L utilizes Lewin's Change Theory as the theoretical underpinning and encompasses three phases consistent with Lewin's Change Theory. Lewin described change behavior as occurring as a three-step process. The three steps within Lewin's Change Theory are: unfreeze, change, and refreeze.[12] Lewin described actions that occur within each of the three steps that can be used to promote lasting change that assisted with the design of the HS4L program curriculum development.[12]

Phase I

The first phase of HS4L focuses on the unfreezing of current unhealthy behaviors. The unfreezing phase provides cognitive knowledge of healthy habits and possible negative implications of unhealthy habits. At the conclusion of the first phase, students are expected to describe four healthy lifestyle habits that promote lifelong wellness.

Phase II

The second phase of HS4L focuses on changing unhealthy behaviors and moving towards increasing physical activities, increasing healthy food consumption, and improving sleep hygiene. The main activities within these modules are healthy homework, food and sleep

journaling. Students are encouraged to evaluate progress on their goals through reflective journaling.

Phase III

The third phase of HS4L focuses on refreezing the newly developed healthy behaviors. The main focus of the phase is assisting students with planning for the long-term adoption of healthier habits. The importance of healthy habits is reviewed with the students; then, the students are encouraged to complete a healthy lifestyle pledge. The completion of the healthy lifestyle pledge indicates the student's intent to refreeze the healthy habits for the long term.

Participants

A physical education teacher piloted the HS4L program with middle school students during eight physical education class meetings. The middle school students were enrolled in the fifth through eighth grades at intervention time. The HS4L program was included as part of the regular physical education class meeting, and students were not required to attend additional classes as part of the HS4L program. The project leader invited both the school principal and physical education teacher to provide an evaluation of the program via quantitative and qualitative methods.

Instrumentation

The "Healthy Skills 4 Life" Feedback survey consists of seven items utilizing Likert Scale rankings of 1 (*Strongly Disagree*) to 5 (*Strongly Agree*) along with one open-ended narrative question to collect qualitative data. The survey was sent to the participants via Qualtrics' link; completion of the survey was voluntary and returned electronically via Qualtrics. The survey tool was developed by the project leader and validated by the project chair, a doctorally prepared nurse with experience in academia, and the practice partner, a

PhD-prepared psychologist. Since the project's purpose is to pilot and evaluate the HS4L program, the survey was designed to assess the experience of those teaching and implementing the program. Furthermore, the feedback survey offered the physical education teacher the opportunity to provide input into needed program changes or updates before the next offering.

Procedure

HS4L was implemented at the pilot school from March to May 2022. Before the pilot started, the project lead provided the physical education teacher with the HS4L program curriculum and instructional resources. By design, no formal teacher training or healthcare background was required for teaching the HS4L program. However, the project leader did allow the teacher to ask any questions about the curriculum or implementation process. Once the teacher indicated readiness, the HS4L pilot was initiated with the students.

The physical education teacher enacted the HS4L program's eight educational modules over a ten-week period. The project lead was available as a resource during program implementation. Once the HS4L instructional modules were completed with the students, the physical education teacher and school principal provided feedback via the "Healthy Skills 4 Life" Feedback survey about the experience. In addition, the participants offered qualitative feedback on the curriculum modules and implementation experience.

Data Analysis

The HS4L program was evaluated using the "Healthy Skills 4 Life" Feedback Survey. The survey results were analyzed utilizing a mixed-methods approach with the results reported in Table 1. Survey data was analyzed using descriptive statistics for the Likert Scale questions. The open-narrative question was analyzed to identify concepts and themes focused

on program successes and ways to support improvement for future program offerings.

RESULTS

Table 1

"Healthy Skills 4 Life" Feedback Survey Results

	Topic	Mean	Qualitative Results
Q1 -	Increased student knowledge of healthy habits	5.00 (0.00)	
Q2 -	Promoted skill development to assist with stress management	5.00 (0.00)	
Q3 -	Furthered students' health goal setting ability	5.00 (0.00)	
Q4 -	Content was appropriate in length and complexity for my students	4.50 (0.50)	Program content was slightly over the heads for 5th and 6th graders. Would recommend more simplistic version for 5th and 6th graders. Would recommend shortening module time to 30 minutes.
Q5 -	I felt supported during implementation by project leader	5.00 (0.00)	
Q6 -	Enjoyed implementing HS4L Program	5.00 (0.00)	
Q7 -	Would recommend offering HS4L in the future	5.00 (0.00)	HS4L was a good addition to our school this year. Would support offering it again in the future.
	Total	4.93	

Note. N=2. Standard deviations are presented in parenthesis.

The total average Likert score for the program is 4.93 indicating a successful pilot of the HS4L program. The high average score indicates the participants enjoyed the HS4L program implementation experience and would recommend future offerings. Further, the participants

rated the HS4L program as effective in increasing student knowledge of key content areas. Survey question four regarding content length and complexity scored the lowest of all questions with a score 4.50. Qualitative comments for this question reflected that the younger students had difficulty with some of the content. In addition, there is a recommendation that the instructional module time be reduced from 45 minutes to 30 minutes.

DISCUSSION

The pilot of the HS4L program yielded several significant outcomes. The results from the feedback survey support the hypothesis that a physical education teacher can independently and effectively deliver a holistic wellness curriculum during the formal physical education class meeting. The data supports the HS4L program is effective in assisting students with developing skills within key content areas of developing healthy habits, healthy stress management, and health goal setting. In addition, the pilot demonstrates the importance of the school principal's support for student wellness initiatives.

The HS4L program demonstrated an overall positive impact on the pilot school and students. One important impact factor is forty middle-school-aged youth received holistic health education at the pilot school. In addition, the piloting of the HS4L program also served to create schoolwide awareness of the need for and benefits of holistic health education for the students. Lastly, the HS4L pilot demonstrated a desire for holistic health education at the pilot school. The school principal stated that he understood the need to add health content to the school curriculum. However, he was not sure how to start this type of program. A community nurse supplied the pilot curriculum, which offered the principal a starting point for and support in adding this vital content to the school.

Overall, the HS4L's curriculum is considered successful based on this pilot. The feedback of the content being too complex for fifth and sixth graders will be taken into future offerings by suggesting that older students be the focus over modifying the curriculum. Before being offered to students in the future, the project leader recommends modifying the modules to be greater in number which would allow for a shorter instructional time per module.

Implications for school health policy, practice, and equity

The pilot of HS4L program indicate it can be successfully utilized to provide health education to middle school students in an efficient and cost-effective manner. The program's design allows the instructor to implement the program with minimal upstart effort or support. Further, the program does not require a healthcare background for the teacher of the content making implementation feasible for any school with a physical education teacher. The program is also designed to be a short-term addition to the school's existing physical education offering. This feature makes the addition of health content simple for the school since it does not require any changes to core curriculum instructional time. The HS4L program offers schools the ability to offer health and wellness education for students that can promote lifelong healthy habits.

Limitations

During the HS4L pilot, several limitations were noted by the project leader. The significant limitations were: student absences during the program offering, rescheduling of physical education courses with little or no notice to the physical education teacher beforehand, and competing demands on the physical education teacher's time and attention.

The HS4L program pilot occurred during the ongoing COVID-19 global pandemic. Due to the pandemic, the student absence rate was increased. In addition, some students were absent for extended periods. The HS4L program design consists of educational modules built upon the

previous module's content. The HS4L program's effectiveness was likely reduced for students who could not complete all of the modules in the order specified.

The HS4L curriculum pilot was offered within the school gymnasium space. The school gymnasium is a shared multi-use space between the school and church communities. During the project implementation, the physical education teacher was informed that she would need to relocate the class because others needed to use the gymnasium space. The moving of the class created undue stress on the teacher and led to some of the education modules being offered in a setting that was not educationally optimal.

The pilot occurred during the latter portion of the academic year. The school had several sports occurring during the implementation period and multiple schoolwide enrichment events. While the sports and enrichment events are essential to developing positive school culture, they created competing demands for the physical education teacher. These events detracted her time and attention away from the HS4L pilot. During some of the enrichment events, the physical education instructor had competing duties that resulted in some of the HS4L modules being rescheduled. Several modules contain student homework that require tracking and reporting on a selected healthy behavior covered within the program. The delay in reporting and discussing barriers surrounding the selected healthy behavior could have resulted in recall bias for the students. Recall bias could have had a negative effect on the health goal-setting module. One of the primary outcomes of the HS4L program is to assist students with learning how to set appropriate health goals for themselves. The lack of accurate personal data leading up to goal setting would have made goal setting less effective for some students.

The noted implementation barriers offer insight into strengthening the HS4L program for future offerings. One recommendation for future offerings is to create schoolwide awareness and

support of the HS4L program schedule. The school principal would be asked to elicit school community support for protecting the HS4L class meetings and agenda. Teachers would be asked not to schedule field trips or other class events during the HS4L instructional period. The school and church community would also be asked to limit the use of the gymnasium during this time. In addition, the physical education teacher and school principal would be asked to identify a suitable alternative instructional site ahead of the program offering. The alternative site would be utilized when the class needed to be relocated. Determining an appropriate alternative location would limit the stress on the physical education instructor and ensure that the program's instructional quality would not be compromised. Further, the HS4L program should be offered during the first portion of the academic year when competing events would be less numerous

CONCLUSIONS

Middle school students are receptive to health education programming via the HS4L program, which can provide the foundation for lifelong health and wellness. Physical education teachers can serve as an essential instructional resource for students within health and wellness education area. Physical education teachers can provide effective instruction to students when supplied with the HS4L holistic health curriculum with minimum formal upstart and support. Findings indicate that the HS4L program offers a way for middle school students to be introduced to holistic health education in an effective and budget-neutral manner. The HS4L program provides a starting point for a schoolwide approach to improving student health and wellness. The HS4L program should be scaled and offered to additional students in the future. In future program offerings, the project leader recommends the addition of student data points to determine student satisfaction in addition to the teacher data points.

HUMAN SUBJECTS APPROVAL STATEMENT

This research was approved by the Instructional Review Board, operating through the Office of Research Integrity and Compliance (ORIC) at Gardner-Webb University, which voluntarily adheres to pertinent federal guidelines related to the protection of human participants in research. All researchers and faculty sponsors of research have active CITI certification. Certifications remained valid throughout the investigation process.

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