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Implementing a Replicable Model for K-12 Health Literacy to Promote Positive Youth Development

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Abstract

This article describes a replicable model of health literacy that promotes positive youth development. Now in its fifth year of implementation and run by Advance African Development, Inc., it is an integrated year-long, in-class, student-centered, technology-driven, and service-learning youth empowerment program. Forty-minute sessions are offered once a week to create health literate K-12 public school students able to use the Internet to obtain and understand health information, and to practice informed decision-making about their health. Data collected were qualitative and included student service learning projects to solve community health issues. Community engagement exposed students to problem-solving, collaborative and transformational leadership, and advocacy skills. Prior to the program, less than half of the students had heard of MedlinePlus, and those who had heard of it rarely could describe its purpose. Approximately 500 students and 10 teachers participated, and over 40 sessions were provided from August 2015 to June 2016.

Keywords

Adolescents; community outreach projects; elementary school students; health disparities; health education; public school students; service learning; social determinants of health

BACKGROUND

Health literacy is a complex and evolving construct (Chinn and McCarthy 2013). It is a key public health issue that is integral to health promotion, disease prevention, chronic disease management, and a significant determinant of health outcomes (Ferguson and Pawlak 2011). Health literacy refers to “how well a person can get the health information and services that they need, and how well they understand them. It is also about using them to make good health decisions” (U.S. National Library of Medicine 2016).

Current data show that only 12% of American adults are proficient in health literacy (Winkelman et al. 2016; Armstrong-Heimsoth et al. 2017), and nine out of ten adults have

problems finding and using health information to make decisions about their health (US DHHS 2017a). Limited health literacy is associated with worse health outcomes and higher costs (Berkman et al. 2011; Griffey et al. 2014), and affects people's ability to search, use health information to modify health behaviors, and respond to important public health alerts (US DHHS 2010). If this trend of low health literacy persists, future health care costs are projected to run into trillions (Vernon et al. 2007). Therefore, "confronting issues of health literacy in the United States is a critical feature in addressing health disparities" (Logan et al. 2015, 4). In addition, "health literacy is a very important concept, which shows us how education and health can collaborate to achieve both public health outcomes and high levels of skills and knowledge in students" (St Leger 2001, 204).

Although some controversies still surround ideal methods of measuring health literacy, Nutbeam (2000) regards use of health-related knowledge, attitudes, motivation, behavioral intentions, and personal skills, as well as self-efficacy, as ideal measures of health literacy. However, little is known about health literacy among the K-12 student population because most programs target adults (Diamond et al. 2011), especially those with chronic diseases. Thus, youth's levels of health literacy are hopelessly low (Dispatch Admin 2014). Schools provide opportunities to promote students' health literacy, yet many states have removed or drastically reduced the health education requirements, with health literacy not typically mandated (Winkelman et al. 2016). Some argue that collective efforts to improve health literacy will yield positive outcomes and make a national impact if offered early enough, especially before the onset of adult-related chronic diseases and also during prime periods when children and adolescents are beginning to develop and mold their health behaviors (Winkelman et al. 2016).

THE K-12 HEALTH LITERACY EFFORTS

As the future generation, K-12 students have potential to assume important leadership roles as productive citizens. Documented evidence alludes to the significance of promoting young people's health. Advocacy for positive youth development is rationalized on the premise that today's youth are tomorrow's workforce, parents, and leaders (Caron 2011). Some studies have demonstrated the connection and logical interplay between students' good health and academic performance (CDC 2017a). Youth development as a public health approach helps young people build strong relationships with others, learn new skills, and give back to their communities (St Leger 2001). Although some school districts are recommending health literacy as a requirement for student graduation, others still lag behind in offering standardized health literacy curricula and also vary widely and inconsistently when offered (Nutbeam 2000). Also, inconsistent offering of grade level health curricula might, to some extent, reduce students' proficiency levels in health literacy (Institute of Medicine (US) Committee on Health Literacy et al. 2004).

The National Health Education Standards (NHES) were put in place to promote and support health enhancing behaviors for students at different levels of the education system (CDC 2016). Yet national standards to improve primary and high school students' health literacy skills have not been widely adopted and embraced in educational settings (Marks and Higgins 2012). As young people rely more and more on the Internet for health information,

it is imperative to teach them effective ways to access, understand, and use health information and services (Beck et al. 2014). Generally, adolescents are quick to embrace and use new technology such as the Internet, thus giving educators a lot of opportunities to engage them in more meaningful and innovative ways (Skinner et al. 2003; Borzekowski and Rickert 2001).

Accessing the Internet is progressively becoming an essential part of today's adolescents' daily lives (Jiménez-Pernett et al. 2010; Skopelja, Whipple, and Richwine 2008), and youths are increasingly using digital tools to look up health information (Skopelja, Whipple, and Richwine 2008). Furthermore, teens are using the Internet as a coping strategy to address their health-related challenges (Deardorff 2015). As U. S. teenagers continue to deal with new, emerging, and often confusing health concerns, about 84% of them turn to the Internet for health information, with almost a third of them modifying their health behaviors based on knowledge gained through Internet searches (Deardorff 2015). Although youths are using the Internet as their key source of health information (Borzekowski and Rickert 2001; Ettel et al. 2012; Beck et al. 2014), they still struggle to choose websites containing useful, trusted, reliable, and understandable health information (Ettel et al. 2012; Beck et al. 2014). This gap underscores the need to expose students to trusted and reliable Internet health information. If effectively implemented with K-12 school students, health literacy can play an integral role in promoting desirable health behaviors (Marks 2012).

Past health promotion and disease prevention efforts primarily targeted individual health behaviors, yet several social factors, outside of health care, that are social determinants of health also influence an individual's health status (Kaplan, Spittel, and David 2015). Thus, health outcomes are a result of the interplay of several social factors and conditions outside of health care (Zimmerman, Wolf, and Haley 2015; Viner et al. 2012). *Healthy People 2020* added social determinants of health and adolescent health as new topic areas to be addressed (US DHHS, Office of Disease Prevention and Health Promotion 2014). What this means is that where individuals live, work, play, go to school, etc., and the systems and policies that are put in place, influence the health of individuals; thus, there is a need to pay more attention to adolescent health.

The Centers for Disease Control and Prevention (CDC) expanded the Coordinated Approach to School Health (focused on the individual child) and created Whole School, Whole Community, Whole Child (WSCC) as a collaborative approach to learning and health. To have the most positive impact on the health outcomes of young people, government agencies, community organizations, schools, and other community members must work together through a systemic and comprehensive approach (Lewallen et al. 2015), which results in the advocacy for a multisector and interdisciplinary approach to health and learning

In addition, The National Action Plan to Improve Health Literacy seeks to engage organizations, professionals, policymakers, communities, individuals, and families in a coordinated effort to improve health literacy (US DHHS 2010). The health literacy program discussed here is in response to gaps already established. Its overarching purpose is to create a cohort of K-12 health-literate public school students. As noted by Adkins and Corus

(2009), there is a need to raise health literacy rates in communities, and the school curriculum can help to alleviate the increasingly diverse and emerging health challenges.

In this digital-driven era of the twenty-first century, the Internet has become the most common, popular, go-to and preferred source of online health information for everyone across the lifespan. School students are not left behind because they also have easy and unlimited access to the Internet be it at their homes, schools, public libraries, and even public places and business sites such as restaurants, cafés, bookstores, and shopping malls, just to mention a few examples. Also, students have easy access to a wide range of electronic devices, and are continuously bombarded, with unsolicited, massive sources of pop-up websites with information including health information, which can either be good or bad depending on origin, source, and authenticity of such content.

In addition, many students are technologically savvy and yet some of their educators and adults in their lives lag behind on technology skills, thus creating a digital divide between students and grown-ups. Regardless of this advantage, some of these students lack very basic search and literacy skills needed to support their health literacy knowledge (Jain and Bickham 2014). This problem is further exacerbated because some parents, who ideally should help out, also lack health literacy skills. As noted elsewhere, illiteracy in reading has been found to significantly influence the extent to which students are able to comprehend and understand health information. Despite students' comfort, familiarity, and self-confidence with the Internet and electronic devices, many of them still lack good searching techniques.

PROGRAM OVERVIEW

Currently, there is a gap in addressing K-12 health literacy. Although students are increasingly using the Internet for health information, little research has been done to assess and improve their "eHealth literacy" – i.e., their ability to find, evaluate, and apply online health information (Paek and Hove 2012).

Now in its fifth year of implementation, the program described in this article is a replicable model of health literacy that promotes positive youth development. Run by Advance African Development, Inc., it is a comprehensive, integrated, year-long, in-class, student-centered, experiential, technology-driven, and service-learning youth empowerment program. It is offered once a week for 40 minutes during Physical Education, Health I, and Health II class periods at participating Pittsburgh Public Schools. The program uses MedlinePlus as an entry point to expose students to trusted and reliable Internet health information websites. The overall project outcome is to create health literate K-12 public school students who are able to use the Internet to obtain and understand health information, and to practice informed decision-making about their health. The program is framed using *Healthy People 2020*, Social Determinants of Health (US DHHS 2017b), Health Disparities (US National Library of Medicine 2017), and Health Equity (CDC.2017b) discourse. This health literacy program is also guided by the Coordinated School Health Program and the Whole School, Whole Community, Whole Child (WSCC) framework, with its emphasis on a collaborative approach to learning and health as espoused by the Centers for Disease Control and

Prevention (CDC 2017c). The curriculum addresses health issues and other healthy lifestyle behaviors needed for youth to succeed in school and beyond. The program is offered to create health-literate K-12 Pittsburgh Public Schools students and promote a culture of health and wellness by integrating program curriculum into K-12 health education classes, aligning program content with the national and statewide health education standards. Both concepts used to frame this program are relevant to achieving long-term project outcomes because:

Healthy People 2020 envisions a day when preventable death, illness, injury, and disability, as well as health disparities, will be eliminated and each person will enjoy the best health possible. This transformation will occur by changing our thinking about health, examining root causes and societal determinants, and directing more interventions to address primary, causal factors that affect health. Healthy People 2020 ... fosters innovative thinking about how we can collaborate to achieve health promotion and disease prevention objectives for the nation (Secretary's Advisory Committee on National Health Promotion and Disease Prevention 2010).

Working on their community mapping activities to establish healthy and unhealthy communities, students in this school-based health literacy program were successful in identifying social factors / characteristics affecting the health status of their communities and neighborhoods.

After exposure to trusted and reliable health information, the next process of student empowerment as agents of change is the transfer of training. Students are facilitated to apply school-based, in-class knowledge gained to plan, develop, and implement a community action service-learning project in their respective communities/neighborhoods. Program implementation sessions introduced students to MedlinePlus and other National Library of Medicine online health resources (NLM resources) and connected them to other sources of trusted, validated, and reliable age-appropriate online health information, such as the Centers for Disease Control and Prevention <CDC.gov> and KidsHealth <KidsHealth.org>. The purposes of this program are to:

1. Estimate the prevalence of health literacy problems among school students to inform age-appropriate program interventions;
2. Promote health literacy skills among student population using relevant technology;
3. Develop and equip students with academic and life skills needed to succeed in college and beyond by increasing their informed and empowered decision-making capabilities;
4. Introduce and expose high school students to potential career choices in the health sciences and other fields; and
5. Increase awareness and knowledge of disease-specific health disparities among high risk underserved African Americans /other ethnic groups in inner-city neighborhoods, as well as at local and national levels.

APPROACHES AND INTERVENTIONS USED

Established as a partnership and collaboration involving local universities, the community, community-based service learning sites, and Pittsburgh Public Schools, the program targeted a cohort of elementary and high school students (3rd, 4th, 5th, 9th, and 10th graders).

Advance African Development, Inc. (AAD), who implemented the program, is an Approved Partner for the Pittsburgh Public Schools. Using the train-the-trainer model, some of the health literacy sessions were facilitated by college student volunteers from the University of Pittsburgh's School of Pharmacy, School of Education's Department of Applied Psychology, college student volunteers recruited through the YMCA Collegiate at the University of Pittsburgh, nursing students from Duquesne University taking service learning courses for credit hours, graduate students from the University of Pittsburgh Schools of the Health Sciences taking independent studies, faculty from the University of Pittsburgh School of Nursing, local community members with relevant health related expertise and career development experiences, other invited guest facilitators, and motivational speakers.

Several effective and participatory teaching/learning strategies were used during the sessions. These included: videos; computer-based, individualized, and small group instruction; facilitation using structured and thematic worksheets; inquiry-based instruction; small group/whole class discussions; question-and answer-sessions; report-back sessions; individual/group quizzes; guest speaker series; personal stories; brainstorming; interactive games; and project-based interventions. In-class sessions covering basic health literacy concepts included:

- An introduction to navigating the MedlinePlus website;
- Searching MedlinePlus and other NLM resources to find reputable health information;
- Reading prescription and over-the-counter medication labels;
- Using MedlinePlus and other NLM resources to locate information on health disparities in African Americans and other ethnic populations;
- Introduction to social determinants of health, health disparities, and health equity;
- Building a community model and mapping their community health by zip codes;
- Using *Healthy People 2020* to recap health disparities and social determinants of health;
- Learning to evaluate health information on the web;
- Problem tree analysis to identify community challenges and health gaps; and
- Career choices to involve introduction to health science careers and other professions.

After exposure to health literacy content, high school students were instructed to apply this knowledge. Working in groups of no more than four students, and reflecting on their mapping exercise, students planned, developed, and implemented community action service

learning projects. The service learning project was designed to promote systemic, critical thinking and problem-solving skills by allowing students to apply knowledge, skills, and competencies gained in class to address a health-related issue affecting their respective communities. Service learning is a student-centered participatory teaching and experiential learning approach where students transfer knowledge and skills gained at school to address real-life community health problems. In a nutshell, this health literacy program is structured as follows:

Phase I: Creating health literate high school students.

Student-centered and project-based approaches were used to actively engage students in the teaching/learning process. During this phase, students received hands-on-experience navigating MedlinePlus and other trusted websites using structured worksheets. All students in this program spent at least two sessions getting familiar with the MedlinePlus website and other sites such as KidsHealth and CDC. After gaining confidence, students used structured worksheets to learn more about this program's key concepts such as health disparities, health literacy, health equity.

Phase II: Implementing a Community Action Service-Learning Project.

After exposure to key health literacy content, students were facilitated to identify root causes of most common community health problems affecting minority populations in general and specific to Allegheny County using the "problem tree" analysis. Furthermore, using the planning card deck activity, students were able to explore sequencing and relevance to the process of planning, developing, and conducting service learning projects. In addition, students' activities during this phase involved conducting literature searches using National Library of Medicine (NLM) resources to coincide with service learning topics.

Students identified a health problem/issue of interest through the problem tree analysis when mapping their communities by zip code, through research using the computer-based activity on health disparities, and from their lived experiences in the community and at school. Students planned, developed, and implemented a community action service learning project. For logistics, students were given options to work individually, in pairs, or teams of four students. All facilitators involved with this school-based health literacy program had child abuse, criminal, and FBI clearance on file consistent with Pittsburgh Public School clearances and requirement policies. For the 9th and 10th graders, existing schedules and toolkits from previous years were reviewed for relevance and appropriateness and revised in collaboration with the participating teachers to make sure the health literacy curricula complemented their official Health I and Health II school curriculum without unnecessary duplication of content.

In addition, the program and participating school staff planned and selected the health literacy content as a joint effort and aligned it with the national and statewide health education standards. Furthermore, this program also used the technology design cycle and its evaluation rubrics to align project curricula with the standards. Collaborative planning and on-going consultations helped to match program materials and activities to formal health curricula and standards. At one school site, the students taking Health I classes were 9th

graders, and those taking Health II classes were 10th graders. The other two school sites combined 10th, 11th, and 12th graders for both their Health I and Health II class periods to accommodate student requirements for graduation.

Phase III: In Class PowerPoint Presentations and Reflections.

Using the peer educator model, all high school students presented their service learning projects and reflections using PowerPoint. The 3rd, 4th, and 5th grade implementation schedules were interdisciplinary and holistic. The program activities that were used helped students to refine their reading skills and to develop new vocabulary while searching for information to answer assigned tasks to promote active, independent learning. The elementary students were very successful in following instructions to find information for themselves using structured worksheets, interactive videos, educational games, and independent learning; they accessed children's pages on MedlinePlus, CDC, KidsHealth, and other sites. The project has successfully demonstrated that students can be self-motivated and genuinely interested in curriculum content if they see relevance of the content to their daily living. The program utilized validated evidence-based and age appropriate health content. The elementary students were engaged by spending time on task, completing in-class assignments, and being able to share their experiences during whole class discussions. Health literacy promoted students' self-confidence, sense of accomplishment, self-esteem and self-efficacy capabilities.

RESULTS

Based on the local and national health standards, a majority of the students were able to comprehend and understand concepts related to health promotion and disease prevention to enhance health. To measure comprehension and understanding, several strategies were used. Facilitation worksheets allowed students to access websites and, in their own words, summarize research content. The program also used Bloom's Taxonomy of educational objectives to design session activities. These structured session activities allowed students to acquire knowledge, skills, and attitudes. Other sessions allowed students to acquire specific facts/ideas that helped them to determine whether health disparities existed or not.

Each session started with a recap to establish whether students understood the program materials from previous sessions and linked responses to new material. This was necessary to establish the extent to which students comprehended and understood information covered in previous sessions. Also, the use of questioning techniques and small and whole class discussions helped to measure comprehension. Working on community action and service learning projects helped students to apply knowledge gained to solve real community problems. This was done to establish whether students were conversant with health literacy, health disparities, health equity, social determinants of health, and *Healthy People 2020* concepts covered in this program. Equipped with this information, students demonstrated their levels of comprehension and understanding by applying knowledge to identify, plan, and conduct a service learning project. Students also wrote reflections based on their community service learning engagement experiences.

At the elementary level, students were asked to read and summarize their search results/outcomes, list new vocabulary, and then use the new words to construct complete sentences. This approach allowed student to build their vocabulary and improve reading while learning health concepts. Based on outcomes of the MedlinePlus activity worksheet, most students indicated their interest in using MedlinePlus beyond the program period as evidenced by a sample of its program outcomes discussed in the paragraphs below. All students successfully navigated MedlinePlus and other reputable online health information websites such as [Healthypeople.gov](https://www.healthypeople.gov) using the instruction sheets provided. All students spent some time exploring the MedlinePlus site map, and once comfortable, they were able to discuss different ways to navigate MedlinePlus and topic areas used to organize this website's information. In addition, students were able to describe what MedlinePlus is and later used the website to learn more about most common diseases affecting minority population in comparison to the disease burden of other ethnic groups/races using worksheets provided to expedite their inquiry and research. In addition, students now use MedlinePlus to complete other Health I and Health II class assignments, and to locate up-to-date health news articles and health data to support their service learning problem statements. Individually, students were proficient in locating information, and used it to compare, analyze, and document their observations about disparities.

Qualitative data results show the extent to which students were able to use examples of social determinants of health to correctly identify characteristics of unhealthy communities, a result of their mapping by zip code activity. Students used the following characteristics to exemplify why their communities are currently unhealthy because of:

“Boarded and vacant houses, overgrown grass, food deserts, too many corner stores and fast food restaurants, lack of economic opportunities, high school dropout rates, limited access to quality healthcare, poor educational opportunities, high unemployment rates, excessive shootings, lack of recreational centers, limited public transportation opportunities, high crime rates, guns and gang violence, trash everywhere, poverty, drug activities, many homeless people in the streets, limited /no internet access at home.”

Students were asked to indicate whether it was easy or difficult to locate information using MedlinePlus and most of them concurred that it was easy and supported their responses, as in the following example:

“It was easy because it gave us direct information about the topic and had many results to choose from. The short summary of breast cancer had a quick list of how people (females) can get breast cancer. It gave specific information in the first couple sentences. It described what blood pressure is and listed a variety of websites related to High Blood Pressure. The directions given made it easy. This website is very organized, easy to navigate around...”

As a follow-up, students were asked whether they would use MedlinePlus to search for health information again, and nearly all the students responded positively, as this example shows:

“Yes, because its health news is up to date and useful for my health articles every month in health class. Provides a lot of information for me and my partner and about our bodies and diseases. Website has health information that can be important for the future. I learned a lot of new information about cancer. It’s helpful when trying to learn about diseases, disorders, and cures. Has a lot of information about different health topics, drugs, videos, games, and health disparities. It’s a fun website to use, and I like to learn more. It has honest reliable information, a safe and good source. It helps you know what’s going on in the world and has so many sources.

Although students were not knowledgeable about social determinants of health when they started the program, all of them successfully framed their service learning projects within the context of social determinants of health, health disparities, and *Healthy People 2020*. Additional data activity asked students to cite examples of health disparities, social determinants of health, and *Healthy People 2020* topic area that each service learning project was addressing to promote health equity. Using the scoring sheet provided, students successfully completed the evaluation process of comparing reliable and trustworthy online health information websites ending with .gov, .edu, .org, .net, and .com. Furthermore, all students successfully completed the hands-on activity on reading prescription and over-the-counter medication labels. The process involved distributing worksheet and empty prescription and over-the-counter packets; students were asked to complete and answer questions based on this activity. Guest speakers from the University of Pittsburgh School Of Pharmacy as well as the Assistant professor from the School of Nursing enriched students’ learning experiences. College student facilitators used Generation X resources and developed a jeopardy game played in teams. The game made the learning episode effective, enjoyable, and fun.

On health disparities as part of individualized self-directed and computer-based “Surfing MedlinePlus” activity, students provided statistics to show diverse health disparities as exemplified by the following excerpts:

“Among 10 to 24 year-olds, homicide is the leading cause of death for African Americans; the second leading cause of death for Hispanics; and the third leading cause of death for American Indians and Alaska Natives. Gay and bisexual men are most likely to be affected by HIV, and in that group, African American men are at higher risk. Too many cases, too many deaths: lung cancer...African Americans suffer from lung cancer more than any other population group in the U.S. with African American men having the highest rates of prostate, lung, colon/rectum, and oropharyngeal cancer. Unequal access to health care, lack of education, stigma, and racism are linked to health disparities.

By participating in this activity, students were able to understand the meaning of health disparities.

Examples of students’ community service learning projects justifying their choice of topic and rationale for their interest are summarized here. One project was titled: “The Negativity in Youth Development and Life.” A student in this group said,

“For my service learning project (SLP), I wanted to go for a creative idea like a project that I never did before. I wanted something challenging, but also something that is a problem (common) in today’s generation. This idea I came up with was very hard and difficult. I went through many obstacles and challenges that I had help for. The SLP I came up with is called ‘The Negativity in Youth Development and Life’ because youth violence is the number one cause and conflict today throughout the country. So in order to make progress in this SLP, I had to complete CHUNKS, get in contact with coordinators, and people, and participate in volunteer opportunities. Everything will be explained step-by-step in this PowerPoint.”

Another example of a service learning project was titled: “Getting There ... A Morning Walk in the Dark.” Students in this group said:

“As a group, we wanted to do something that related to students. We wanted to focus on the issue of how students struggle with early start times, dangerous commute routes to school, no yellow bus transportation, etc. We wanted our project to be interactive and relevant to Pittsburgh Public School students who struggle with these issues. So I thought about my project my sister and I did last year with the Buhl Foundation and One Northside called “Getting There... A Morning Walk in the Dark.” We won a \$1,000 grant where we held an event that brought awareness to the community and highlighted some of the challenges that students face getting to school.”

All 10th graders took turns, used PowerPoint, and shared their community service learning project reports and reflections to the rest of their classmates, teachers, and health literacy program staff. The students demonstrated high levels of confidence, professionalism, and public speaking as well as creativity, enthusiasm, and organizational skills. Student highlighted a social determinant of health, a health disparity, and a *Healthy People 2020* topic area being addressed and improvements made in their respective communities. In addition, all students now use MedlinePlus for research and for completing other health-related class assignments. Also, the students are now knowledgeable about healthy and unhealthy communities, and the concept of food desert neighborhoods and effects of gentrification on minority and low-income communities. Additionally, students displayed an array of academic and other essential life skills, such as teamwork, time management, public speaking, time-on-task, problem-solving, critical thinking, conflict resolution, consensus building, and accessing and evaluating sources of health information. Furthermore, the program succeeded in promoting students’ self-confidence, sense of accomplishment, self-esteem, self-motivation, reading, and self-efficacy capabilities. In summary, this health literacy curriculum complemented and enriched the teaching and learning environment without unnecessary duplication of health content. The program continues to fulfil the “Whole Child, Whole Community” initiative while also building on the school district’s goals to: Accelerate Student Achievement, Eliminate Racial Disparities, Develop a Student-focused Culture, and Expect Great Things.

At the elementary level, the program has been very successful in positively modifying student behaviors. All students were purposefully engaged, worked well together, and completed assigned tasks in a timely manner. Students were disciplined and enjoyed

working on assigned activities. Students also showed increased interest in health literacy as evidenced by how they referred to real health issues affecting their families, how they asked very intriguing questions on topics under discussion, class participation, and overall presentations.

Nearly all students mastered skills to navigate reputable online sources of health information, were able to evaluate Internet-based health information, and were fairly articulate in describing these procedures in their own words. All students identified and listed the most common diseases affecting African Americans, successfully located data (statistics) pertaining to the disease burden of this target population, and even managed to come up with group summary reports that they shared with the rest of the class. This was a result of how the assessment for this community action project required students to indicate sources of data/statistics to support evidence and significance of their targeted problem. Furthermore, participating students were knowledgeable about health literacy's core subject matter, the dangers of limited health literacy, the *Healthy People 2020* framework and its topic areas, health disparities, and social determinants of health. Students became familiar with common diseases affecting African Americans, and the importance of screening tests for African American youth. All students were familiar with appropriate and reliable sources of online health information and used appropriate jargon about health literacy concepts. Use of age-appropriate videos enhanced students' learning experiences.

In addition, students were able to identify characteristics of their communities and successfully evaluated why and how such neighborhoods were generally unhealthy. As part of problem-solving, a majority of the students suggested what needed to be done in their communities to make them healthy as evidenced by the outcome of their mapping assignment titled: Building a Community Model. Almost all of the students shared personal reflections about how they have been able to share health literacy core content materials with their families and friends, and were comfortable sharing their family history and their risk for some chronic diseases such as sickle cell, diabetes, heart disease, etc., because of their family histories. In addition, they were able to describe and list characteristics of a healthy literate society. With the current health literacy program, project goals and objectives were met and successfully accomplished.

CONCLUSION

The program continues to demonstrate the value of applying the knowledge gained in school to address real-life community health problems and promote health equity. In addition, the program validates the notion that students at any level can be self-motivated; they will be genuinely interested in the curricula content if they see relevance of the content to their daily life experiences. Equipped with relevant tools and knowledge, public school students can be effective community advocates and agents of change for individual, family, and community health once they understand the root causes and are encouraged to be independent learners. Furthermore, the program has been successful in addressing health disparities through student and community engagement and partnerships. The program has effectively embraced county and city-wide disease prevention and health promotion at many levels.

By educating, engaging, and empowering inner-city public school students, the program has enabled students to begin to develop a culture of health and wellness as they navigate MedlinePlus and other trusted and reliable online sources of health information for decision-making. The service learning project has helped students to conceptualize community challenges and has promoted positive youth development and community engagement. In addition, the program continues to touch upon the district's overall curriculum and various state standards. It encompasses the quest for academic excellence and accelerating students' achievement at so many levels. In that regard, Advance African Development will continue to offer this age-appropriate and school-based health literacy program to support positive youth development.

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Biography

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