Increasing Awareness, Knowledge, and Confidence Level of Accessing Adolescent Sexual Reproductive Health Services and Resources for School Personnel at a Public Middle School

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Abstract

Background: Many adolescents do not have access to adequate sexual and reproductive health (SRH) education and lack awareness and knowledge of services and resources. Adolescents spend more time in school than any other setting. School personnel play a crucial role in guiding youth to make informed and thoughtful decisions. They can promote access to available services but must have awareness, knowledge, and confidence about SRH education, services, and resources. The problem addressed in this project is low awareness and knowledge about adolescent SRH services and resources among middle school personnel. ***Purpose:*** This project aimed to increase middle school personnel's awareness, knowledge, and confidence level of accessing SRH services and resources. ***Methods:*** A toolkit was created and implemented with an in-person educational training on local adolescent SRH education, services and resources. Measurements assessed awareness and knowledge, perceived helpfulness, and feedback prior, immediately post, and three-months post training. Questions from the Sexual Health Education for Professionals Scale (SHEPS) measured confidence level. Data was analyzed using descriptive statistics, frequencies, percentages, and content analysis. ***Results:*** All participants were health educators (n= 7). Participants' awareness and knowledge of SRH services and resources improved after project implementation. The post-test (M= 20.16, SD=3.43) and three-month post-test (M= 19.33, SD= 4.45) SHEPS scores increased from the pre-test (M=16.3, SD= 4.54). Participants reported that the toolkit and presentation were helpful and that they referred back to the content. ***Conclusion:*** This project supports that a toolkit and educational training are effective in increasing school health educators' awareness, knowledge and confidence level.

Keywords: adolescent, sexual reproductive health, health educators, health services, training, toolkit, school personnel, reproductive justice framework

Introduction

Access to adolescent sexual and reproductive health (SRH) education and services plays an important role in reducing teen birth rates and incidence of sexually transmitted infections (STIs) and human immunodeficiency virus (HIV). Many adolescents do not have access to adequate SRH education and lack awareness and knowledge of services and resources. Challenges include lack of a trusted adult, concerns over privacy and confidentiality, and cultural practices (Loosier et al., 2016). These health inequities result in increased teen birth rates, and increased incidence of STIs and HIV. Teen pregnancy has been associated with poor socioeconomic outcomes and poor maternal and child health outcomes (Egan et al., 2020; Medline Plus, 2018). Increased teen birth rates persist in racially/ethnically diverse and low-income communities (Brittain et al., 2020; Leung et al., 2020; O'Uhuru et al., 2016).

In the Greater Lowell region in Massachusetts, specifically Lowell, public school student demographics include 39.6% students that identify as Hispanic/Latino, 26.7% Asian, 21.8% White, 7.6% Black/African American, 4.1% Multi-Race, Non-Hispanic, and 0.1% Native American (Massachusetts Department of Elementary and Secondary Education, 2022d). Although Massachusetts has one of the lowest teen birth rates, the teen birth rate in Lowell, MA is double the state rate (Massachusetts Department of Public Health, 2022). According to the MA 2021 Youth Risk Behavior Survey, the rate of students who had sexual intercourse for the first time before age of 13 years old was 2.7 percent (Centers for Disease Control and Prevention, 2021). In the 2012 Lowell Communities that Care Survey, 22% of middle school respondents and 40.5% of high school respondents reported being sexually active. The 2012 Lowell Communities that Care Survey also showed that 47.3% of sexually active middle school

respondents reported that they did not use any method of birth control or condoms the last time they had sexual intercourse (Lowell Community Health Center, n.d.).

In 2018, Lowell had higher rates of Chlamydia and Gonorrhea (145.4 per 100,000) when compared to the state rate of 110.3 per 100,000 (Tello et al., 2022). In 2019, Lowell had the third highest annual rate of new HIV infection diagnosis (26.9 per 100,000) in the state (Tello et al., 2022). In Massachusetts, sexually active minors of childbearing age may access family planning services and consent to treatment for STIs and HIV (Commonwealth of Massachusetts, 2023; Juvenile Rights Advocacy Project, 2006). Because minors of childbearing age can access and consent to SRH services, middle school is a critical moment for students to receive age-appropriate and evidence-based SRH education and learn about services and resources in their communities. Adolescents spend more time in school than at home, therefore school personnel can play a crucial role in guiding adolescents to make informed and thoughtful decisions, reduce risk-taking behaviors and improve health outcomes. School personnel can promote access to available services. To support adolescents, school personnel must have awareness, knowledge and confidence about SRH education, services and resources.

Problem Statement

The impetuous for this DNP project came from a group of middle school health educators in Massachusetts expressing lack of adolescent SRH information and resources to guide and support their students adequately and appropriately. The problem addressed in this DNP project is that school personnel (health educators, counselors, nurses, and social workers) lack awareness and knowledge about adolescent SRH education, services and resources.

Purpose Statement

The purpose of this DNP project was to design and implement a SRH resources toolkit through an in-person educational training on existing, available adolescent sexual reproductive health services (SRH). This project aimed to increase middle school health educators', school counselors', school nurses', and school social workers' awareness, knowledge, and confidence level regarding local SRH services and resources.

Review of the Literature

Key terms used in the database search were "sexual and reproductive health care," "sexual and reproductive education," "sexual and reproductive services," "adolescents," "school-based health centers," "school nurses," "schoolteachers," "quality of care," "access to care," "referral systems," and "care coordination." Via the electronic UMass Amherst Libraries system, the databases used in the search processes were Cumulative Index to Nursing and Allied Health Literature (CINAHL) and PubMed. Initial broad searches found 782 results, but more specific searches "sexual and reproductive health," "adolescents," "access to care," "school-based health centers" established between 23 to 57 possible studies. Inclusion criteria limited the pool to studies within the past five years. Two research studies which were published prior to 2017 were frequently mentioned in other studies, therefore exempt from the inclusion criteria (Dittus et al., 2014; Loosier et al., 2016). Eighteen studies were included in this literature review. Research designs were systematic reviews/meta-analysis (Level I), quasi-experimental (Level III), observational (Level V), and qualitative/ descriptive (Level VII) (Polit and Beck, 2018). The articles were analyzed and synthesized to gain a better understanding on the problem and solutions to lack of knowledge, awareness, and community collaboration for adolescent sexual and reproductive health services.

Initiatives Improving Adolescent SRH Education, Services and Resources

The reviewed studied included needs assessments, youth, and clinic surveys, questionnaires assessing demographic characteristics, sexual behavior, and sexually transmitted infections (STIs)/ human immunodeficiency virus (HIV), and teacher and youth perspectives (Andrzejewski et al., 2020; Dickson et al., 2020; Egan et al., 2020; Loosier et al., 2016; Murray et al., 2019; O'Uhuru et al., 2017; Rasberry et al., 2017; Rose et al., 2018). Pre- and posttests were used to evaluate interventions (Dittus et al., 2014). Interviews or focus groups were conducted with community health workers, community members, adolescents, parents, and school personnel (Decker et al., 2021; Egan et al., 2020; Give et al., 2019; Leung et al., 2020; Murray et al., 2019; Rose et al., 2018; Tran et al., 2020). Research study samples consisted of adolescents between the ages of 13 to 19 (Andrzejewski et al., 2020; Decker et al., 2021; Dittus et al., 2014; Mazur et al., 2018; Rasberry et al., 2017; Rea et al., 2022). Participants were adolescent females, adolescent youth, women of reproductive age, people who identify as transgender. Several study participants identified as Black and Hispanic/Latino (Andrzejewski et al., 2020; Decker et al., 2021; Rasberry et al., 2017).

The need for improving SRH education and access to SRH services for adolescents is highlighted in the literature. Initiatives to address lack of adolescent SRH education and services took place in urban settings such as the Bronx, New York, while others took place in more remote areas such as England, Mozambique, and Ethiopia (Decker et al., 2021; Leung et al., 2020; O'Shea et al., 2020; O'Uhuru et al., 2017; Tegenaw et al., 2022). In both settings, the common goal was to improve access to and quality of SRH services. Many researchers aimed to implement a standardized referral guide as a tool to increase awareness and access to SRH services (Loosier et al., 2016; Tran et al., 2020). Referrals and follow-up calls increased the

likelihood of adolescents seeking SRH services such as education, contraception, and STI/ HIV testing (Decker et al., 2021; Dittus et al., 2014; Give et al., 2019; Loosier et al., 2016; Rasberry et al., 2017). Referrals to SRH services were found to be effective, but limited training/professional development was a barrier to implementing referrals and community collaboration efforts (Brittain et al., 2020; Tegenaw et al., 2022; Tran et al., 2020). A referral guide, *Project Connect*, was described by researchers as a means of connecting adolescents to SRH services (Decker et al., 2021; Dittus et al., 2014; Loosier et al., 2016).

Technology-based initiatives were utilized to better understand adolescents' concerns about privacy and confidentiality (Rea et al., 2022). Systematic reviews on youth friendly SRH services and technology-based initiatives included 20 to 28 studies (Mazur et al., 2018; Rea et al., 2022). Establishing a safe and trusting relationship with an adult helped adolescents feel more comfortable when asking questions and seeking care (Loosier et al., 2016; O'Shea et al., 2020; O'Uhuru et al., 2017; Rea et al., 2022). Technology plays a major role in the lives of adolescents. Therefore, using text, phone or video call to communicate with adolescents can help ensure follow through and appointment attendance (Rea et al., 2022; O'Shea et al., 2020). Technology-based services have increased access to care, timeliness, and improved engagement (Rea et al., 2022; O'Shea et al., 2020).

Barriers to Accessing Adolescent SRH Education, Services and Resources

Existing research has evaluated access to adolescent SRH education and services, and barriers faced by adolescents. Researchers were interested in learning about adolescents' experiences accessing SRH services with the goal to increase awareness and connect adolescents to SRH services (Decker et al., 2021; Dittus et al., 2014).

School-based health centers (SBHCs) and educational trainings for health care professionals and school personnel have shown to improve adolescent health outcomes and reduce rates of teen pregnancy and STIs/ HIV (Decker et al., 2021; Dittus et al., 2014; Give et al., 2019; Loosier et al., 2016; Rasberry et al., 2017; Rea et al., 2022; O'Shea et al., 2018). SBHCs are not accessible to all populations, but communities that implemented SBHCs and promoted seeking SRH services showed decreased rates in teen births and increased STI/HIV testing (Leung et al., 2020). Commonly, school nurses are responsible for making referrals; however, it is important to consider barriers related to school resources such as SBHCs, adequate staffing, workload burden, and feasibility (Dittus et al., 2014; Leung et al., 2020; Rasberry et al., 2017).

Scarce professional development and training opportunities were a reoccurring issue. Healthcare professionals and school personnel felt training would improve delivery of SRH education, access to care, and guide students in making healthy decisions, and help address adolescents' concerns about privacy and confidentiality (Brittain, et al., 2020; Decker et al., 2021; Murray et al., 2019; O'Shea et al., 2020; Rea et al., 2022; Tegenaw et al., 2022). Middle school health educators felt uncomfortable in answering student questions, difficulty establishing rules, and facilitating comfort in the classroom environment (Rose et al., 2018).

Limitations encountered by researchers were lack of engagement and commitment from healthcare professionals and adolescents (Andrzejewski et al., 2020; Egan et al., 2020; Rea et al., 2022; Tran et al., 2020; O'Uhuru et al., 2017). Additional limitations were variations in scope of practice for healthcare providers at SBHCs and lack of access to technology (Egan et al., 2020; Give et al., 2019). Administrative delays and inadequate staffing were barriers in planning,

timing, training and implementing workshops (Dittus et al., 2014; Egan et al., 2020; Dickson et al., 2020; Loosier et al., 2016; O'Uhuru et al., 2017).

Educating Healthcare Professionals and School Personnel

While most existing research primarily focused on improving SRH education and services for adolescents and educating healthcare professionals, school nurses, and schoolteachers, others aimed to increase awareness of SRH services among adolescents' parents (Dickson et al., 2020; Egan et al., 2020; Murray et al., 2019). Healthcare professionals and school personnel suggested professional development and training on caring for the adolescent population, addressing adolescents' concerns about privacy and confidentiality, and increasing youth engagement (Brittain et al., 2020; Murray et al., 2019; Rea et al., 2022; Rose et al., 2018). There was emphasis on cultural competency, age-appropriate, inclusive and gender friendly SRH education and services (Andrzejewski et al., 2020). Middle school educators recommended guidance in answering student questions, establishing rules, and facilitating comfort (Rose et al., 2018). It is important for healthcare professionals and school personnel to be educated on privacy and confidentiality regarding technology-based services, health services and facilitating an inclusive and safe environment (Rea et al., 2022; Rose et al., 2018).

Workshops focused on implementing toolkits and guidance for healthcare professionals and school personnel enhanced competency about SRH and increased community collaboration (Loosier et al. 2016; Tran et al., 2020). Overall, there is an understanding that access to adolescent SRH education, services and resources requires a collaborative approach to implement initiatives such as improving referrals, educational toolkits, healthcare professional and school personnel training. Increasing awareness of adolescent SRH services has led to

increased utilization of services and community collaboration (Andrzejewski et al., 2020; Leung et al., 2020; O'Shea et al., 2020).

Summary

Several initiatives have increased awareness and improved access to adolescent SRH services. Researchers implemented workshops for healthcare professionals and school personnel, SRH education, improved referral processes and implemented technology-based services. Telemedicine has become more common since the COVID-19 pandemic, therefore investigating policies and guidelines about privacy and confidentiality for adolescents would be beneficial (Rea et al., 2022; O'Shea et al., 2018). Teaching communication skills for adolescents to approach trusted adults (school personnel and parents) about sexual health were assessed, however there is limited literature on this topic (Loosier et al., 2016; Rasberry et al., 2017; O'Shea et al., 2020). Exploring adolescent knowledge of SRH services and utilization of a standardized tool that assesses referral care, available services, scheduling, and appointment follow-up may improve better access to care (Decker et al., 2021; Leung et al., 2020; Mazur et al., 2018). Current evidence suggests that implementing a toolkit and educational training for healthcare professionals or school personnel would increase knowledge, awareness and improve access to adolescent SRH services and resources.

Theoretical Framework

This DNP project strongly aligns with the ideals of the Reproductive Justice (RJ) framework. The RJ framework emphasizes the impact of systemic oppression on individuals' reproductive health decision making (Asian Communities for Reproductive Justice, 2005; Yates et al., 2022). See Appendix A. The RJ framework ensures equitable and patient- centered access to reproductive health services (Yates, et al., 2022). The RJ framework aims to empower

individuals and communities to advocate for reproductive health rights and justice (Asian Communities for Reproductive Justice, 2005; Ross, 2006).

The issue that the DNP project addressed is the lack of awareness, knowledge, and confidence level of accessing adolescent SRH services and resources by school personnel. The implementation of a toolkit and educational training provided school personnel with valuable information to increase their awareness and knowledge. Its purpose was to improve confidence level and empower school personnel to advocate for access to adolescent SRH education, services, and resources. School personnel are essential members of a community and their engagement and collaboration are a step forward in achieving reproductive justice (Asian Communities for Reproductive Justice, 2005; Ross, 2006).

Goals, Objectives and Expected Outcomes

The goal of the DNP project was to implement a toolkit with an educational training for school personnel on adolescent sexual and reproductive health, and existing available health services and resources in the community. The project objectives and expected outcomes include:

Goal	Objective(s)	Outcome(s)
To educate and provide a toolkit for the middle school health educators, school nurse, counselors, and social workers about adolescent sexual reproductive health (SRH) services and resources.	• Deliver one 60-minute educational training presentation for the toolkit to the middle school health educators, school nurse, counselors, and social workers at the public middle school during September 2023. • Immediately prior to the educational training (Sept 2023), participants completed a pre-test regarding their awareness and knowledge and self-report confidence of adolescent SRH services and resources.	• 80% of middle school health educators, school nurse, counselors and social workers would attend the educational training. • 80% of participants would complete a pre- and immediate post-test.

	• Immediately after the educational training (Sept 2023), participants completed a post-test regarding their awareness and knowledge and self-report confidence of adolescent SRH services and resources. • After the educational training presentation and distribution of the toolkit, participants completed a test to assess self-reported confidence during December 2023. • After the educational training presentation and distribution of the toolkit participants completed an immediate post-test and three-month post-test to assess level of helpfulness of the toolkit and provide feedback.	• 80% of participants would complete a post-test three months (December 2023) after the intervention. • 80% of participants would report improved confidence. • 80% of participants would report the educational training and toolkit as being helpful. • 80% of participants would provide feedback.

Methods

Project Design

The project used a pre- and post-educational intervention design. A toolkit (Appendix B) on adolescent SRH services and resources was designed by the DNP student, and one in person 60-minute educational training presentation (Appendix C) was provided directly to school personnel at the project site. The DNP student developed a customized toolkit based on specific needs in this community. The CDC Communication Toolkit guided the DNP student through modules on how to design a toolkit (Centers for Disease Control and Prevention, 2022). The

toolkit covers information on comprehensive sex education, adolescent SRH health services and resources, creating safe spaces, confidential care, and includes community, state, and national resources. The toolkit also incorporates self-evaluations, reflection prompts, and practice questions. These exercises were based on information, activities, and educational guides provided at planned parenthood professional workshops and Massachusetts health frameworks (DESE, 2023; Massachusetts Department of Education, 1999; Planned Parenthood, n.d.; Planned Parenthood, 2019). Participants received a physical copy of the toolkit and presentation, and a URL link for the online version of the toolkit. A physical copy and digital version of the toolkit were made available for school personnel to access at the health teacher's classroom.

Project Site and Population

This DNP project was implemented at a public middle school in Massachusetts. This community has a population of 113,994 consisting of 60.3% white residents, 8.9% African American, 21.2% Asian, and 17.9% Hispanic (Tello et al., 2022, p. 26). Most students in this community identify as Hispanic and Asian (MA DESE, 2022). For 44.7% of students, English is not their first language (MA DESE, 2022). Approximately 75% of students are considered in low-income status (MA DESE, 2022).

This project was implemented by the DNP student with assistance of a non-profit public health organization's director of special projects and evaluation (project mentor), and a public middle school health educator (site mentor), who is also the chair of the Health Education Task Force in this community. The director of special projects and evaluation guided and supported the DNP student throughout project development, implementation, and evaluation. The site mentor assisted the DNP student in recruitment, coordination of the educational training, distribution of the toolkit, and project implementation. Stakeholders for this site were school

administration, the site mentor, school health educators, school counselors, school nurses, school social workers, and the project mentor. There are forty-one educators, one guidance counselor, two social workers, one school nurse, and other supporting staff such as a parent liaison and community partnerships coordinator. The Health Education Task Force consists of the site mentor health educator (Chair), middle school health educators, and the youth substance use and prevention coordinator. The task force meetings were held monthly at this public middle school or virtually.

Recruitment

Recruitment began following the University of Massachusetts, Amherst (UMASS) Internal Review Board (IRB) approval in the August of 2023. See Appendix D for the official IRB Determination Approval Form. School health educators, school counselors, school nurses, and school social workers were recruited at the project site and the Health Education Task Force via personal invitation by the DNP student and site mentor, and by announcements at the Health Education task force meetings. The DNP student asked interested participants to either (1) share their preferred email or (2) personally contact the DNP student via email for additional project information. The DNP student assessed each participant for inclusion and exclusion criteria. The inclusion criteria consisted of English-speaking adults aged 18 years and older who worked at the project site and middle school health educators. The educational training from this project was counted as professional development which educators were expected to attend each year.

Measurement Instruments

To measure the outcomes of this DNP project, a pre-test, immediate post-test, and a three-month post-test were created and adapted by the DNP student and project mentor. The pre-test, immediate post-test, and three-month post-test all included questions from the *Sexual Health*

Education for Professionals Scale (SHEPS) to assess confidence level. The pre-test also included questions regarding occupation, awareness and knowledge, and confidence level. The immediate post-test included awareness and knowledge, confidence level, and perceived helpfulness questions. The three-month post-test consisted of confidence level, perceived helpfulness, and additional feedback questions.

The DNP student created the Occupation, Awareness and Knowledge, Perceived Helpfulness, and Feedback questions. These questions were developed based on literature for designing questionnaires (Boynton & Greenhalgh, 2004; O'Connor, 2022; Polit & Beck, 2018). Participants were asked one question regarding their occupation. The Awareness and Knowledge questions consisted of four dichotomous "yes" or "no" questions and five "true" or "false" questions to assess awareness and knowledge of adolescent SRH services and resources. The DNP student developed Perceived Helpfulness questions to assess how helpful the participants perceived the educational training and toolkit. The Perceived Helpfulness questions consisted of two questions in 5-point Likert scale format measuring from "1= Not at all Helpful to 5= Extremely Helpful."

Adapted and modified questions from the *Sexual Health Education for Professionals Scale (SHEPS)* were utilized to assess confidence level (Ross et al., 2018; Van Deventer et al., 2023; Zamboni & Ross, 2019). The DNP student contacted the author of the SHEPS and asked for permission to include, adapt, and modify several questions (refer to Appendix E). The original scale is made up of 101 questions (Zamboni & Ross, 2019). The SHEPS has three subscales which measure perceived communication skills and comfort (37 items), perceived knowledge (37 items) and sexual attitudes (27 items) (Zamboni & Ross, 2019). The SHEPS has shown high internal reliability with Cronbach's alphas of 0.93 at pretest and 0.90 at posttest

(Van Deventer et al., 2023; Ross et al., 2018; Zamboni & Ross, 2019). Van Deventer et al. adapted and modified the SHEPS and measured knowledge and communication using 37 items (2023). Based on the SHEPS in the research by Van Deventer et al. (2023), the DNP student utilized five of 37 items (13.5%). These five questions were most pertinent to the DNP project which focused on confidence level of accessing adolescent SRH services and resources. With permission, the five questions were modified to state "student" instead of "person" (Van Deventer et al., 2023; Ross et al., 2018; Zamboni & Ross, 2019). The five questions were regarding confidence in knowledge related to adolescent sexual reproductive health services using a Likert scale measuring from "1= not confident at all to 5= completely confident."

Finally, the three-month post-test Feedback questions included one check all that apply to assess which sections of the toolkit were most helpful to participants, one question regarding frequency the toolkit was utilized in the past three months, and one open-ended question about the educational training and toolkit. Refer to Appendix F to view the pre-test, post-test, and three-month post-test questions.

Data Collection Procedures

The tests were distributed to and completed by participants immediately prior, immediately after, and three months after the intervention. The current profession of the participants was asked immediately prior to the intervention. The Awareness and Knowledge questions were collected twice, immediately prior and immediately after the intervention. The SHEPS-derived questions were collected at three different points, immediately prior, after, and at three months (December 2023) after the intervention. The Perceived Helpfulness questions were collected twice immediately after and three months after intervention. The Feedback questions were collected once three-months after the intervention. The pre-test and immediate post-test

were collected via paper format, while the three-month post-test was collected electronically via Google Survey.

Participants wrote their initials on the tests to match responses. There were no repeat initials within the group of participants, therefore there were no issues with matching tests at the three different points. Participants shared their email for the DNP student to distribute the three-month post-test. Only the DNP student and project mentor accessed this information.

Data Analysis

The DNP student transferred the paper pre and immediate post-test responses into the SPSS dataset. The three-month post-test responses were downloaded from Google Survey to Excel, and then transferred to SPSS. The occupation question was coded as 1= health educator, 2= school counselor, 3= school nurse, 4= school social worker. Then, the percentage of each occupation was calculated. From the Awareness and Knowledge questions, the four "yes" or "no" questions were coded 1 to 4, and the five "true" or "false" questions were coded 1 to 5. There were five Likert-type questions for the SHEPS which were coded 1 (not at all confident) to 5 (completely confident) (Boynton & Greenhalgh, 2004; Van Deventer et al., 2023). The two five-point Likert-type questions for Perceived Helpfulness were scaled from 1= not at all helpful to 5= extremely helpful based on Likert-scale examples (Brown, 2010; Parmeshwar et al., 2018;). From the three-month post-test Feedback questions, the check all that apply question was coded 1 to 10 and the frequency question was coded 1 to 6. The open-ended Feedback question responses were reviewed by the DNP student and transferred from Google Survey to an Excel spreadsheet. Then the responses were summarized and categorized by common themes (Columbia University, 2023; Polit & Beck, 2018).

All test results were reviewed by the DNP student and project mentor for accuracy. The data was not accounted for one participant who did not complete the pre-test. Graphical representations of data, consisted of tables and line graphs to demonstrate the different time points of which data was analyzed (Polit & Beck, 2018). Qualitative data was summarized in paragraph form.

Data analysis was completed with IBM SPSS Statistics Version 28 (IBM Corp., 2022). From the Awareness and Knowledge questions, the data were analyzed using descriptive statistics. Also, a frequency and percentage of participants who answered "yes" or "no" to each question was calculated. The five "true" or "false" Awareness and Knowledge questions were analyzed by summing up all five item scores for each participants' total score. The percentage was found by the dividing the total score of each participant by the total maximum score then multiplying the result by 100. The percentage of change for the true/false questions were calculated by percentage of the post-test minus pre-test percentage.

To analyze the confidence level, the DNP student summed the total score of each participants' SHEPS, rather than individual questions. The total score ranges between 5 and 25. The mean (and SD) scores for all the participants at baseline, immediate post, and three-month post-test were calculated. SHEPS total scores for each participant were displayed using a line graph. Time was viewed as a continuous variable. The X-axis displayed each time of which participants completed the SHEPS (pre, post, and three-month post-test). The Y-axis displayed the SHEPS total scores.

The Perceived Helpfulness and Feedback questions are described using percentages and frequencies. Immediate post-test Perceived Helpfulness responses were compared to the three-month post-test Perceived Helpfulness responses. The three-month post-test Feedback questions

(check all that apply and frequency question) are described by frequencies and percentages. The open-ended Feedback question was asked three months after the intervention and analyzed by content analysis to identify overarching themes.

Ethical Considerations/Protection of Human Subjects

The University of Massachusetts, Amherst (UMass) Internal Review Board (IRB) approved the DNP Project prior to the student implementing the project. Written approval to implement this project was obtained from the school administration. The human subjects participated in this project were school personnel. No minors/ middle school students participated in this project, and no student information was accessed. The evaluation tests included identifying information, but only participant's initials were used, and the paper tests were stored in a locked cabinet in the project mentor's office. The digital data was stored in the DNP students' personal, password protected computer. Identifying information was only accessed by the DNP student and project mentor. See Appendix D for the official IRB Determination Approval Form.

Results

Seven participants attended the educational training; all participants were health educators. Participants completed the surveys immediately prior to the intervention and immediately after the intervention. Of the seven participants, six participants completed the pre-test. One participant joined the presentation late, therefore was unable to fill out the pre-test. All participants completed the post and three-month post-test. The project began in Fall 2023 and concluded in Spring 2024. Refer to Appendix G for the project timeline.

Findings from Awareness and Knowledge Questions

Pre-intervention, of the participants that completed the pre-test questions, six participants (100%) were already aware of school-based health centers and five participants (83%) were aware of the community teen clinic. Post-intervention, all participants (n=7) knew about the SRH services provided at the school-based health centers and community teen clinic.

In five true or false questions assessing knowledge of participants, the total score for each participant was compared pre-and- post educational training. Of the participants that completed both the pre-and post-tests (n=6), three (50%) participants had improvements in total scores, and three (50%) participants had no change (Table 1). Two of the participants that had no change in scores had a baseline score of 100%. Findings suggest that at least three participants gained knowledge after the intervention.

Table 1

Results of Pre-and Post-test Change in Participants' Total Score for True or False Questions

	Pre-test	**Post-test**	**Pre-and-Post Change**
Participant ID	%	%	% (Post minus Pre-Scores)
1	40	100	+60
2	100	100	0
3	20	80	+60
4	100	100	0
5	60	80	+20
6	60	60	0
7	Missing	80	-

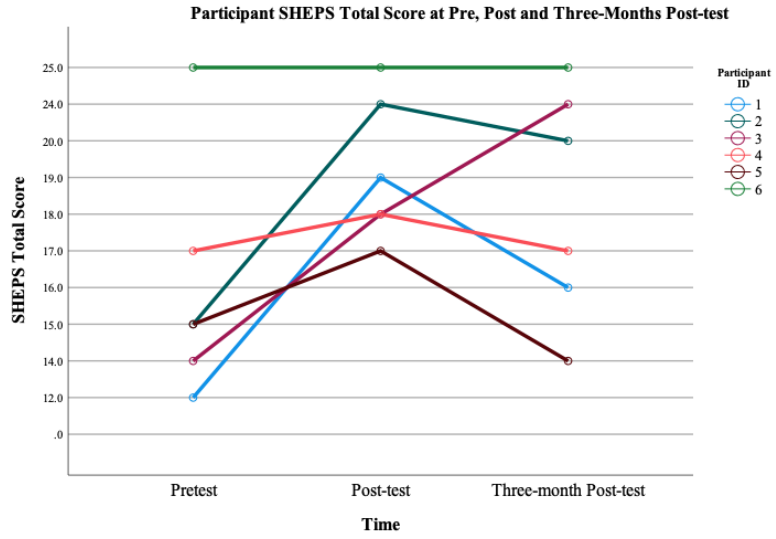
Note. % reflects the percentage each participant scored on the True or False questions. Change in scores was measured by post-test minus pre-test scores. – indicates no change in score. Participant #7 did not complete pre-test; therefore, change could not be measured.

Sexual Health Education for Professionals Scale

The SHEPS assessed level of confidence accessing services and resources. Total scores from five questions for each participant were compared at three different points: pre-, post-, and three-months post-intervention. There was an increase in mean SHEPS scores from the pre-test (M=16.3, SD= 4.54) to the post-test (M=20.16, SD= 3.43). There was a decrease in mean SHEPS scores from the immediate post to three-month post-test (M= 19.33, SD= 4.45). Based on the mean SHEPS scores, participants reported an increase in confidence level compared to baseline confidence level. There were six participants that completed tests at all three-different points. One participant (ID #5) had a decrease in total SHEPS score from baseline to the three-month post-test. See Figure 1.

Figure 1

Line Graph for Results of Participants' SHEPS Scores at Three Different Points



Note. To measure participants' confidence level, the DNP student utilized the SHEPS. The minimum total score was five and maximum total score was 25. Displayed are total SHEPS score for each participant at three different time points (pre, post, and three months post-intervention). Participant #7 did not complete the pre-test; therefore, total SHEPS scores were not displayed.

Perceived Helpfulness

The post-test consisted of two Perceived Helpfulness questions. Fifty-seven (4) of participants perceived the presentation and toolkit as very helpful. Forty-three percent (3) perceived the presentation and toolkit as extremely helpful. For the three-month post-test participants continued to perceive the presentation as overall helpful. No participants perceived the presentation and toolkit as not helpful.

Most Helpful Toolkit Sections

Participants identified sections from the toolkit that were most helpful to them. Eighty-five percent of participants (6) selected State Sex Education Guidelines. Seventy-one percent of participants (5) selected Comprehensive Sex Ed Curriculums. Other sections that were identified as being most helpful were the Healthy Youth Act, Youth Development, Health Services, Creating a Safe Space, and Answering Student Questions.

Frequency Participants Referred Back to Toolkit

The three-month post-test asked how often participants referred back to the toolkit since the intervention. All participants referred back to the toolkit. Specifically, seventy-one percent (5) of participants referred back to the toolkit at least once a month, fourteen percent (1) more than once a month, and fourteen percent (1) more than once a week.

Open-ended Responses

In response to *"what suggestions or comments do you have about the educational training and toolkit?",* common themes that emerged from the feedback were gratitude, effective content delivery, and engagement. Four participants expressed gratitude and stated, "Thank you for your presentation and creating the toolkit," and "I really appreciate that the material was specific to our community." In addition, one participant stated the presentation and

toolkit were “easy to understand,” and “informative.” Another participant mentioned “I enjoyed being able to hear others’ ideas.” Overall, the majority of participants provided positive feedback which demonstrates that the DNP project was valuable to the participants.

Discussion

The goal of this DNP project was to increase middle school personnel’s awareness, knowledge, and confidence level of accessing existing, available adolescent SRH services and resources by implementing a toolkit with an educational training. Research suggests a scarcity of training for health professionals and school personnel that is focused on adolescent SRH (Dickson et al., 2020; Leung et al., 2020; Murray et al., 2019; Rose et al., 2018 & Tran et al., 2020). The DNP student implemented one 60-minute educational training and provided a toolkit on adolescent SRH education, services and resources. Participants completed a pre, post- and three-month post-test to evaluate awareness, knowledge, confidence level, perceived helpfulness, as well as provide feedback. The literature supports that similar interventions have been implemented by researchers to increase awareness and knowledge and access to SRH services (Loosier et al., 2016; Murray et al., 2019; Tran et al., 2020).

The results from this project suggest that participants gained awareness and knowledge of available health services and resources in the community. Findings from the SHEPS showed that there was an improvement in confidence level among participants. Although total mean SHEPS scores did not improve from the post- intervention to the three-month post-intervention, the majority of total mean SHEPS scores at the post-and three-month post-intervention improved from baseline total mean SHEPS score. Rose et al. discussed middle school teacher’s discomfort delivering and receiving SRH education, creating safe and supportive classroom environments and answering student questions (2018). The researchers highlight the need to support school

personnel through education to improve comfort level (Rose et al., 2018). This further supports the importance of educational trainings for school personnel and the role of education in improving confidence related to this topic (Brittain et al. 2020; Dickson et al., 2020; Murray et al., 2019; Leung et al., 2020 & Rose et al., 2018).

Participants perceived the educational training and toolkit as helpful. Most participants referred back to the toolkit at least once a month after the intervention. The most helpful sections from the toolkits were State Sex Education Guidelines, Comprehensive Sex Education Curriculums, Healthy Youth Act, Youth Development, Health Services, Creating a Safe Space, and Answering Student Questions. These findings are consistent with research which indicates that implementation of educational trainings and toolkits are useful (Loosier et al., 2016; Tran et al., 2020).

The project results suggest that educational training and toolkit were beneficial to middle school health educators. The open-ended responses suggested that participants were appreciative of the intervention and viewed the educational training as an opportunity to hear other school personnel's experiences and ideas. Dickson et al. (2020) and Tran et al. (2020) emphasize the need for collaboration among stakeholders in school settings and communities to have the greatest impact addressing barriers related to adolescent SRH education, services and resources.

Strengths

Strengths of this project included the design of an in-person educational training, full support from the site personnel, engagement, and relevant material. Murray et al., found that there was an association between professional development for teachers and improvement in students' health-related knowledge (2019). This DNP project had in-person design which facilitated engagement through thorough discussions between the DNP student and participants

throughout the educational training. As mentioned in the problem statement, the impetuous for this DNP project came from a group of middle school health educators in Massachusetts expressing a lack of adolescent SRH information and resources to guide and support their students. The DNP student created a custom toolkit from scratch based on specific needs of the project site and community which makes this project different than other existing interventions.

Limitations

One limitation of the project was a small sample size. Due to a small sample size and few matched data, the DNP student utilized descriptive statistics and was not able to use parametric statistics for data analysis. This produced a low level of evidence. To yield a larger sample size, this DNP student suggests the implementation of a virtual educational training for easier access. A virtual educational training also addresses the time constraint and capacity limitations. A virtual option provides an opportunity for participants to work at their own pace. In addition, the sample size only consisted of health educators, therefore the DNP student was not able to assess awareness, knowledge, confidence level, perceived helpfulness and receive feedback from other school personnel (school nurses, school counselors, and school social workers). A large sample size may expand participants to be more diverse. Recommendations include recruitment efforts through increasing collaborations with community stakeholders and offering incentives (gift cards, raffles, etc.).

Cost-Benefit Analysis/Budget

The DNP student completed a cost-benefit analysis for this project. Refer to Appendix G for the Cost-Benefit Analysis/Budget.

Conclusion

Inadequate access and knowledge to adolescent SRH education and services and resources have been associated with poor youth health outcomes especially for low-income and minority students. The RJ framework highlights the impact of systemic oppression and strives to ensure equitable access to SRH services for vulnerable populations (Asian Communities for Reproductive Justice, 2005; Yates et al., 2022). As previously mentioned, minors in MA of childbearing age can access and consent to SRH services, thus middle school is a crucial time for students to receive age- appropriate and evidence-based SRH education and learn about services and resources in their communities. School personnel lack awareness, knowledge and confidence level accessing adolescent SRH services and resources. School personnel can play a significant role in addressing gaps in knowledge of and access to SRH services and resources. Increased awareness, knowledge, and confidence of adolescent SRH education, services and resources can help school personnel feel empowered to promote access to available services, provide guidance to adolescents to make informed and thoughtful decisions, and take the right steps in supporting youth for better health outcomes. Based on the RJ framework, this DNP project is an effort towards achieving reproductive health rights and justice (Asian Communities for Reproductive Justice, 2005; Ross, 2006).

The goals and objectives of this DNP project were met by implementing a toolkit with an educational training on adolescent SRH services and resources. There was an increase in awareness, knowledge, and improved confidence level of accessing existing services and resources among health educators at a public middle school in Massachusetts. This project emphasizes the need to continue educational trainings and provide school personnel with tools and resources to better support youth.

Data analysis results were disseminated to the project mentor and site mentor. The DNP student will disseminate project findings to the health education task force and the substance use prevention task force since both task forces are interested in providing education for school personnel in the same community. The project site school personnel will continue to have access to the toolkit and serve as a resource and guide.

The results of the project show an increase in school personnel's awareness and knowledge, improvement in confidence level, and highlight effectiveness of implementing a toolkit and educational training on adolescent SRH services and resources.

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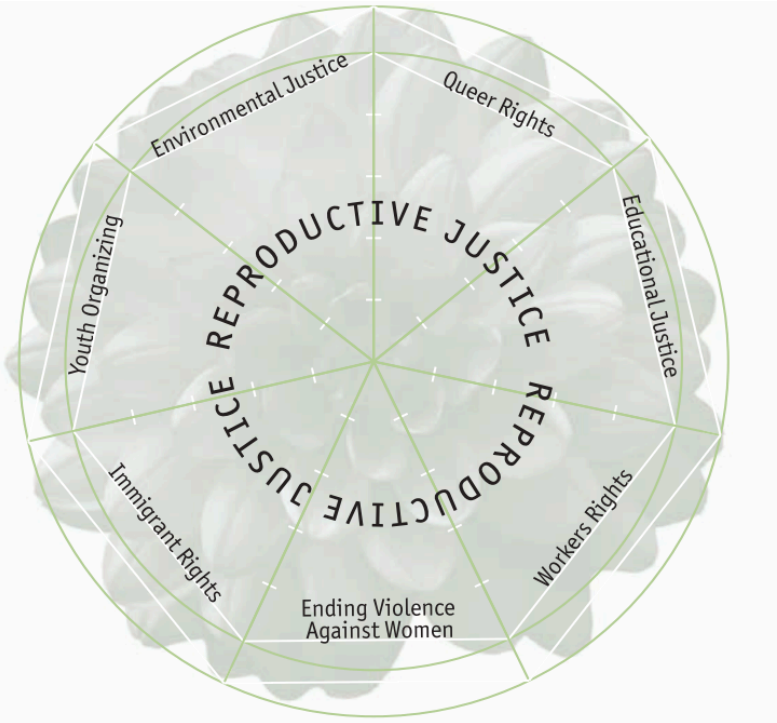
Appendix A

Theoretical Model

Figure 1

Reproductive Justice Framework



Note. Intersectionality of Reproductive Justice with Social Justice Issues.

Appendix B

Sample of Adolescent Sexual and Reproductive Health Services and Resources Toolkit

An Adolescent Sexual and Reproductive Health Services and Resources Toolkit

Marbella Leal Caceres, BSN, RN

DNP in Public Health Nurse Leadership Project, Fall 2023, UMass Amherst

A special thanks to the Greater Lowell Health Alliance, Hannah Tello, Ph.D., Megan Curran, the school personnel at the [redacted] Middle School, and the middle school health educators at the [redacted] Public Schools.

Table of Contents

Introduction

Purpose of the Toolkit

This toolkit is a resource and guide for school health educators, school counselors, school nurses, and school social workers in [redacted], MA. The toolkit includes information on comprehensive sex education (CSE), adolescent sexual and reproductive health (SRH) services, creating safe spaces, confidential care, local and state resources. The activities in the toolkit provide suggestions, reflections, and practice questions for school personnel. Current research shows that access to CSE and SRH services and resources result in better health outcomes for adolescents. School personnel can play an essential role in guiding students to make informed and thoughtful decisions, reducing risk-taking behaviors, and improving student health by providing CSE, sharing information and promoting access to available services and resources.

Reproductive Justice Framework

Implementation of this toolkit strongly aligns with the ideals of the Reproductive Justice framework. It is meant to empower school personnel to advocate for education and SRH services to better support youth in healthy decision making. Visit Asian Communities for Reproductive Justice and SisterSong to learn more about the Reproductive Justice Framework.

State Sex Education Guidelines

The state of Massachusetts does not mandate schools to provide comprehensive sexual reproductive education to students. School districts decide what type and quality of sex education they provide to students. If sex education if offered, schools are not required to include education on sexual orientation or gender identity and consent. In addition, caregivers and guardians have the option to opt-out their child from receiving sex education. The state suggests schools to utilize the MA Comprehensive Health Curriculum Framework published in 1999. Efforts by the Department of Elementary and Secondary Education (DESE) are being made to update the Health Curriculum Framework to ensure gender-inclusivity and trauma-informed practice. *As of September 19, 2023 the new MA Comprehensive Health Education Framework was approved.*

Healthy Youth Act

In Massachusetts, the Healthy Youth Act (HYA) seeks to ensure comprehensive sex education in MA public schools consisting of a curriculum that is research-based, medically accurate, age appropriate, LGBTQ+ inclusive, and culturally competent. Visit Massachusetts State Profile and The Healthy Youth Act to learn more about the Healthy Youth Act.

State Law about Children's Health Care

In Massachusetts, a minor can consent to reproductive and family planning care and treatment without parental consent, therefore middle school is a critical moment for students to receive age- appropriate and evidence-based SRH education and learn about services and resources in their communities.

Why Adolescent Sexual Health Matters?

Current research demonstrates that access to adolescent sexual and reproductive health (SRH) education and services plays an important role in reducing teen birth rates, incidence of sexually transmitted infections (STIs) and human immunodeficiency virus (HIV). Adolescent pregnancy can lead to negative maternal and child outcomes including higher risk of mortality and morbidity, prematurity and low birth weights, and low socioeconomic status[1,2,3]. Students that experience pregnancy are less likely to complete school and pursue higher education. Adolescents face many challenges when seeking sexual health services. Adolescents report a lack of awareness of available services and youth-friendly services. Often, adolescents feel that they do not have a trusted adult to discuss sexual health topics. Some adolescents are hesitant to seek health services because they worry about privacy and confidentiality[4,5]. Access to CSE and adolescent SRH services and resources can help students make informed and thoughtful decisions, reduce risk-taking behaviors and overall, improve health outcomes.

[1] Egan et al. (2020). Engaging expectant and parenting adolescents: Lessons from the Massachusetts pregnant and parenting teen initiative. *Maternal and Child Health Journal, 24*(2), 191-199.
[2] Medline Plus. (2018). *Teenage pregnancy.*
[3] Leung et al. (2020). What will it take? Using an implementation research framework to identify facilitators and barriers in implementing a school-based referral system for sexual health services. *BMC Health Services Research, 20*(1), 1-12.
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Note. This toolkit was created by the DNP student and implemented as part of the project. Content on SRH education, services, and resources was tailored to the targeted community and their needs. The complete toolkit is available upon request.

Appendix C

Educational PowerPoint Presentation

Increasing Awareness, Knowledge, and Confidence Level of Accessing Adolescent Sexual Reproductive Health Services and Resources for School Personnel at a Public Middle School

Marbella Leal Caceres, BSN, RN
Doctor of Nursing Practice (DNP) Candidate
Elaine Marieb College of Nursing
University of Massachusetts Amherst

Introduction & Purpose

- Purpose of Presentation & Toolkit:
  - Increase your awareness, knowledge, and confidence level of accessing existing available adolescent sexual reproductive health (SRH) education, services and resources
  - Provides information on comprehensive sex education (CSE), adolescent sexual and reproductive health (SRH) services, creating safe spaces, confidential care, local and state resources.
  - *Resource and guide for school personnel*

Laws & Mandatory Reporting

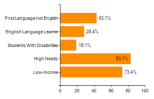
- Children's Healthcare Laws
  - In Massachusetts, minors over the age of 12 have the right to receive reproductive and family planning care and treatment **without** parental consent
  - Anyone over the age 16 can get an abortion **without** parental approval.
    - Under the age of 16 needs parental or judicial approval.
- Mandatory Reporting
  - School staff are mandated reporters
  - When to report? Suspected abuse, neglect or both

Laws & Sex Education

- Sex education is **not** mandated in Massachusetts
- Healthy Youth Act (HYA)
  - The HYA seeks to mandate that public schools who decide to deliver sex education must provide a comprehensive sex education curriculum
    - Research-based, medically accurate, age appropriate, LGBTQ+ inclusive, and culturally competent
  - Does not mandate all public schools to provide comprehensive sex education
  - New MA Comprehensive Health Education Framework

Demographics

2022-23 Enrollment



Enrollment by Race/Ethnicity (2022-23)

Race	% of District	% of State
African American	7.6	9.4
Asian	26.7	7.3
Hispanic	39.6	24.2
Native American	0.1	0.2
White	21.8	54.4
Native Hawaiian, Pacific Islander	0.0	0.1
Multi-Race, Non-Hispanic	4.1	4.4

Massachusetts, High School Youth Risk Behavior Survey, 2021

Find out if there is a statistical difference between females and males. Select them and activate 'Compare Two'.

COMPARE TWO >

Question	Sex	Total
Sexual Behaviors		
Ever had sexual intercourse		–
Had sexual intercourse for the first time before age 13 years		2.7 2,897↑
Had sexual intercourse with four or more persons (during their life)		4.3 2,883
Were currently sexually active (had sexual intercourse with at least one person, during the 3 months before the survey)		18.6 2,885
Did not use a condom during last sexual intercourse (among students who were currently sexually active)		42.0 468
Did not use birth control pills before last sexual intercourse with opposite-sex partner (to prevent pregnancy, not counting emergency contraception such as Plan B or the "morning after" pill, among students who were currently sexually active)		67.4 434
Did not use birth control pills; an IUD (e.g., Mirena or ParaGard) or implant (e.g., Implanon or Nexplanon); or a shot (e.g., Depo-Provera), patch (e.g., OrthoEvra), or birth control ring (e.g., NuvaRing) before last sexual intercourse (to prevent pregnancy, among students who were currently sexually active)		57.3 434
Did not use both a condom during last sexual intercourse and birth control pills; an IUD (e.g., Mirena or ParaGard) or implant (e.g., Implanon or Nexplanon); or a shot (e.g., Depo-Provera), patch (e.g., OrthoEvra), or birth control ring (e.g., NuvaRing) before last sexual intercourse (to prevent pregnancy, among students who were currently sexually active)		82.6 457
Did not use any method to prevent pregnancy during last sexual intercourse with an opposite-sex partner (among students who were currently sexually active)		7.0 434
Drank alcohol or used drugs before last sexual intercourse (among students who were currently sexually active)		20.7 432
Were never tested for human immunodeficiency virus [HIV] (not counting tests done if they donated blood)		–
Were not tested for a sexually transmitted disease (STD) other than HIV (such as chlamydia or gonorrhea, during the 12 months before the survey)		94.7 3,031

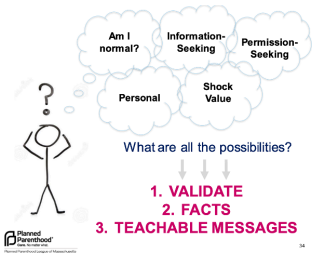
Existing Resources

- Refer to toolkit (pg. 5 – pg. 7)
  - Youth development
  - Health services - School-based health center and Teen Clinic

How do we apply this into practice?

- Assessments, self-reflection, practice activities and questions in toolkit (pg. 8-pg. 12)
- Answering student questions (pg. 14)

Answering Student Questions



Planned Parenthood Three-Step Method

Validate	Facts	Teachable Message
Young people want reassurance that they are "normal."	Here you are answering the actual question and providing information that is evidence-based and using proper language	What message can students take away? Not every question has an opportunity for a teachable message

Practice Student Questions

Category	Information-seeking	Am I normal?	Permission-seeking/advice	Personal beliefs	Shock value
How does a condom work?	★				
Do you think abortion is wrong?				★	
Can you get in trouble for dating someone who is older than you?			★		

Conclusion

QUESTIONS?

WHAT TO EXPECT NEXT

Note. This PowerPoint was created by the DNP student and presented at the educational training. PowerPoint slides containing identifying information of the project site were not included.

Appendix D

Determination of Human Subjects Approval Form

UMassAmherst

Human Research Protection Office

Mass Venture Center
100 Venture Way, Suite 116
Hadley, MA 01035
Telephone: 413-545-3428

Memorandum – Not Human Subjects Research Determination

Date: August 21, 2023

To: Marbella Leal, Nursing

Project Title: *Increasing Awareness, Knowledge, and Confidence Level of Accessing Adolescent Sexual Reproductive Health Services and Resources for School Personnel at a Public Middle School*

HRPO Determination Number: 4764

The Human Research Protection Office (HRPO) has evaluated the above named project and has made the following determination based on the information provided to our office:

☐ The proposed project does not involve research that obtains information about living individuals [45 CFR 46.102(f)].

☐ The proposed project does not involve intervention or interaction with individuals OR does not use identifiable private information [45 CFR 46.102(f)(1), (2)].

☒ The proposed project does not meet the definition of human subject research under federal regulations [45 CFR 46.102(d)].

Submission of an Application to UMass Amherst IRB is not required.

Note: This determination applies only to the activities described in the submission. If there are changes to the activities described in this submission, please submit a new determination form to the HRPO prior to initiating any changes. ***Researchers should NOT include contact information for the UMass Amherst IRB on any project materials.***

A project determined as "Not Human Subjects Research," must still be conducted ethically. The UMass Amherst HRPO strongly expects project personnel to:

- treat participants with respect at all times
- ensure project participation is voluntary and confidentiality is maintained (when applicable)
- minimize any risks associated with participation in the project
- conduct the project in compliance with all applicable federal, state, and local regulations as well as UMass Amherst Policies and procedures which may include obtaining approval of your activities from other institutions or entities.

Please do not hesitate to call us at 413-545-3428 or email humansubjects@ora.umass.edu if you have any questions.

Jorge A. Guzman, Assistant Director
Human Research Protection Office

Appendix E

Permission of SHEPS

Dear Marbella, we would be happy for you to use the SHEPS in your DNP. It is not copyrighted, so all you would need to do would be to fully acknowledge the source and let me know if there is a publication resulting from it.

We just had another paper out from it today: see
https://phcfm.org/index.php/phcfm/article/view/3825

With very best wishes for your interesting and important research, Mike Ross.

Note. The DNP student contacted the author of the SHEPS and asked for permission to include, adapt, and modify several questions (personal communication, March 8, 2023).

Appendix F

Pre-, Post-, and Three-Month Post-test Questions

Occupation Question

1. My current profession is:

- ☐ Health educator
- ☐ School counselor
- ☐ School nurse
- ☐ School social worker

Awareness and Knowledge Questions

1. Have you heard about the School-Based Health Centers in Lowell?

- ☐ Yes
- ☐ No

2. Have you heard about the Teen Clinic at the Lowell Community Health Center?

- ☐ Yes
- ☐ No

3. Do you know about the sexual reproductive health services offered at the School-Based Health Centers?

- ☐ Yes
- ☐ No

4. Do you know about the sexual reproductive health services at Teen Clinic at the Lowell Community Health Center?

- ☐ Yes
- ☐ No

True or False Questions

	True	False
1. Students can receive free sexual reproductive health services at the school-based health centers and the Teen Clinic.		
2. The Teen Clinic is legally required to notify parents/guardians that their child under the age of 18 received care at the clinic.		
3. In Massachusetts, minors under the age of 16 require parental consent for sexual reproductive health services.		
4. In Massachusetts, minors under the age of 16 do not require consent for STI/ HIV testing.		
5. In Massachusetts, minors under the age of 16 do not require parental consent for abortion services.		

Sexual Health Education for Professionals Scale (SHEPS)

Please rate your level of confidence with the questions below using the following scale:

How confident are you when discussing sexuality and sexuality-related topics in the following circumstances?	Not at all confident 1	Slightly confident 2	Somewhat confident 3	Fairly confident 4	Completely confident 5
1) a student with questions about safer sex and sexuality transmitted infections:	○	○	○	○	○
2) a student who desires contraception (e.g., Condoms, oral contraceptives, IUD, etc.):	○	○	○	○	○
3) a student seeking an abortion:	○	○	○	○	○
4) a student who informs you of a topic that requires mandatory reporting:	○	○	○	○	○
5) a student who requires referral for more specialized sexual reproductive healthcare services:	○	○	○	○	○

Post-test: Perceived Helpfulness Questions

Please rate the level of helpfulness regarding the presentation and toolkit using the following scale:

	Not at all helpful 1	Slightly helpful 2	Somewhat helpful 3	Very helpful 4	Extremely helpful 5
1) How helpful was the presentation on adolescent SRH services and resources?	○	○	○	○	○
2) How helpful do you think the toolkit will be?	○	○	○	○	○

Three-month Post-test: Perceived Helpfulness Questions

Please rate the level of helpfulness regarding the presentation and toolkit using the following scale:

	Not at all helpful 1	Slightly helpful 2	Somewhat helpful 3	Very helpful 4	Extremely helpful 5
1) How helpful was the presentation on adolescent SRH services and resources?	○	○	○	○	○
2) How helpful has the toolkit been in the last three months?	○	○	○	○	○

Three-Month Post-test Feedback Questions

Please answer the following questions:

1. Which sections from the toolkit did you find most helpful? Check all that apply.

- ☐ State Sex Education Guidelines
- ☐ Healthy Youth Act
- ☐ State Laws about Children's Health Care
- ☐ Comprehensive Sex Ed curriculums
- ☐ Lowell Youth Development
- ☐ Health Services
- ☐ Creating a Safe Space
- ☐ Answering Student Questions
- ☐ Minors' Access to Confidential Care
- ☐ Resources and Additional Resources

2. How often did you refer back to the toolkit in the past 3 months?

☐ Never	☐ At least once a month	☐ More than once a month	☐ Once a week	☐ More than once a week	☐ Daily

3. What suggestions or comments do you have about the educational training and toolkit?

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Appendix G

Timeline

Table 1

Simplified Project Timeline

Task	September	October	November	December	January	February	March	April
Proposal approval	X							
Meeting with Project team to review, finalize planning for presentation and toolkit	X							
Recruitment of participants	X							
Implementation	X							
Conduct data analysis of pre and posttest		X	X					
3-month posttest				X				
Conduct data analysis of 3-month posttest					X			
Final write-up						X	X	
Sharing of project results to site								X

Appendix H

Cost-Benefit Analysis/Budget

Table 2

Cost Table

Item	Estimated Value	This Project
Data Collection and *Analysis*		
University of Massachusetts Amherst Library Databases	No cost	No cost, free for student use
Materials (colored ink, paper, flyers, printing, online version)	Ream of paper = $9.95/each Ink cartridge = $200/each	Free printing at GLHA, and no cost for online version of the toolkit
Microsoft Office (Word, Excel, PowerPoint)	$100	No cost to UMass Amherst students
Data analysis software- SPSS "Statistics Standard GradPack 28 for Windows and Mac"	$92.95	Rental of SPSS software, total = $92.95
Educational Training Materials		
PowerPoint Presentation Toolkit (printing- paper and online version) Questionnaires	15 copies x 4 pages = 60 pages 20 copies x 29 pages= 580 pages Online version, no cost 15 copies x 2 pages = 30 pages 590 pages = $9.95 x 2 = $19.90	Free printing at GLHA for paper copies of toolkit, and no cost for online version via QR code
Meeting spaces	$50 x 1 hr = $50	No costs, meeting space free at project site
Project Team		
Project lead	.25 FTE = $18,750	Time donated / In Kind
Project mentor Project site mentor (public middle school teacher)	$40/ hr x15 meetings = $600 $35/hr x 15 meetings = $600	No cost, Time donated/ In Kind
Total Cost		
Total estimated value and cost for this project **Total:**	 **$20, 212.86**	$92.95 **$92.95**