

Development of an Evaluation Framework for Planned Parenthood of Central North Carolina's *Teen Voices* Peer Education Program

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On our honor, we have neither given nor received unauthorized aid on this project.

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Acronyms

CDC	Centers for Disease Control and Prevention
EBI	Evidence-Based Intervention
FGD	Focus Group Discussion
HIV	Human Immunodeficiency Virus
IDI	In-depth Interview
IRB	Institutional Review Board
Joven a Joven	Planned Parenthood of Central North Carolina’s adolescent pregnancy prevention and youth development program for Spanish-speaking, Hispanic/Latino youth. The program provides adolescents with culturally appropriate, medically accurate, factual information
MPH	Master of Public Health
New Media Technologies	Products and services that provide information or entertainment via computers or the Internet
PPCNC	Planned Parenthood of Central North Carolina
PPFA	Planned Parenthood Federation of America
PSA	Public Service Announcement
UNC	University of North Carolina at Chapel Hill
SRH	Sexual and Reproductive Health
STI	Sexually Transmitted Infection
Teen Voices	Planned Parenthood of Central North Carolina’s adolescent pregnancy prevention and youth development program. The program provides adolescents with culturally appropriate, medically accurate, factual information

Executive Summary

Despite an overall decline in incidence in recent years, teen pregnancy remains a public health concern in the central region of North Carolina. In 2009, Durham County ranked 24th in the number of teen pregnancies out of 100 counties, an increase from 44th in 2008 (APPCNC Durham County, 2011). In adjacent Orange County, data indicate disparities in teen pregnancy rates between Hispanic/Latina girls, African-American/Non-Hispanic girls, and White/Non-Hispanic girls (APPCNC Orange County, 2011). These trends and disparities suggest the need for focused pregnancy prevention programming targeting youth in central North Carolina. The need for pregnancy prevention programming in Orange and Durham Counties is being addressed in part by Planned Parenthood of Central North Carolina (PPCNC), which sponsors several sexual and reproductive health peer education programs. The Capstone project described in the following report was designed to support current peer education programs at PPCNC, specifically *Teen Voices*, as well as provide direction for other peer education initiatives moving forward. The Capstone team achieved this goal through an investigation of relevant scientific literature, formative research focusing on local teens and other community stakeholders, and the development of materials to effectively evaluate the *Teen Voices* program.

The PPCNC Capstone project has produced six major deliverables. Deliverable I is a systematic review of the scientific literature related to adolescent sexual and reproductive health peer education programs and relevant applications of new media technology to enhance information delivery. Deliverable II is a matrix of findings from focus groups conducted with local youth and parents and semi-structured interviews with local adolescent health service providers. Deliverable III is a report of findings from a brief quantitative survey distributed among recent PPCNC *Teen Voices* program alumni meant to assess attitudes towards proposed program expansion. Deliverable IV is a collection of related documents, consisting of a program brief designed for internal distribution at PPCNC and set of customized fact sheets that synthesize findings from the focus groups, interviews, surveys, and the literature review. These first four deliverables constitute a body of formative research that provides the foundation for the last two deliverables, which are focused on program evaluation. Deliverable V is a process and outcome evaluation plan for the PPCNC *Teen Voices* program as it currently exists (i.e. before any proposed expansion) and it also includes evaluation recommendations for program expansion. The last product, Deliverable VI, is a set of tools outlined in the evaluation plan that will be used for process and outcome evaluation data collection and analysis of the results.

The PPCNC Capstone project work has broad implications for its key stakeholders. The Capstone team gained valuable experience collaborating with a community partner to plan and implement the project. The individual project deliverables presented numerous opportunities for skill development, especially in the development of formative research tools and tailoring materials to suit the needs of a local partner organization. The evaluation of the current *Teen Voices* program provides support for the existing program and feedback on potential strategies for expanding the program in the future. With broader dissemination efforts, the *Teen Voices* evaluation can make a meaningful contribution to the body of practice-based evidence related to teen sexual and reproductive health peer education programs.

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I. Introduction

This Capstone Summary Report describes the work produced by the Planned Parenthood of Central North Carolina Capstone team during the 2012-2013 academic year. Capstone is a project-based component of the Master of Public Health (MPH) degree in the Department of Health Behavior in the Gillings School of Global Public Health at the University of North Carolina at Chapel Hill (UNC). Capstone provides students an opportunity to partner with a community organization to address real world public health issues and serves as a substitute for a Master's thesis paper. The Capstone team, consisting of four MPH students, collaborated with Planned Parenthood of Central North Carolina (PPCNC) in a year-long project to assess the effectiveness of peer education programs, in particular PPCNC's *Teen Voices* peer education program. Vanessa Roth, the health educator and program coordinator for *Teen Voices* in Durham and Orange Counties, acted as the Capstone team's preceptor and supervised the students throughout this process. The overall goal of this Capstone project was to collaborate with PPCNC to develop an evaluation plan for the current peer education programs at PPCNC (specifically *Teen Voices*) and provide direction for the future expansion of the program.

PPCNC provides education programs, health care, and advocacy to help reduce unintended pregnancy and sexually transmitted infections (STI) in central North Carolina. To assist this mission, PPCNC has been implementing two peer education programs in Orange and Durham Counties. The *Teen Voices* program began in 2000, and *Joven a Joven* (Youth to Youth), its culturally-adapted equivalent for Hispanic/Latino youth, began in 2004. Each of these primary pregnancy prevention programs trains groups of adolescents (aged 14-18) to be peer educators on sexual and reproductive health (SRH) information. Following three months of weekly training sessions in a variety of adolescent health topics, these students become key sources of medically accurate SRH information for their peers. Despite the successes of current peer education programs and the overall decline in North Carolina's teen pregnancy rate over the past decade, adolescent SRH remains an area of concern. In 2009, Durham County moved from the 44th highest teen pregnancy rate in North Carolina (as reported in 2008) to the 24th highest (APPCNC, 2011). Moreover, disparities in teen pregnancy rates by racial/ethnic group are evident. In

Orange County in 2010, Hispanic/Latina girls had a teen pregnancy rate of 82.2 per 1000, compared to 9.3 per 1000 for White/Non-Hispanic youth, and 36.6 per 1000 for African-American/Non-Hispanic youth (APPCNC, 2011). Since a systematic evaluation and analysis of PPCNC's peer education programs had not been conducted to determine program effects on health outcomes, the Capstone team created a comprehensive evaluation plan with accompanying evaluation tools for use by PPCNC peer education staff.

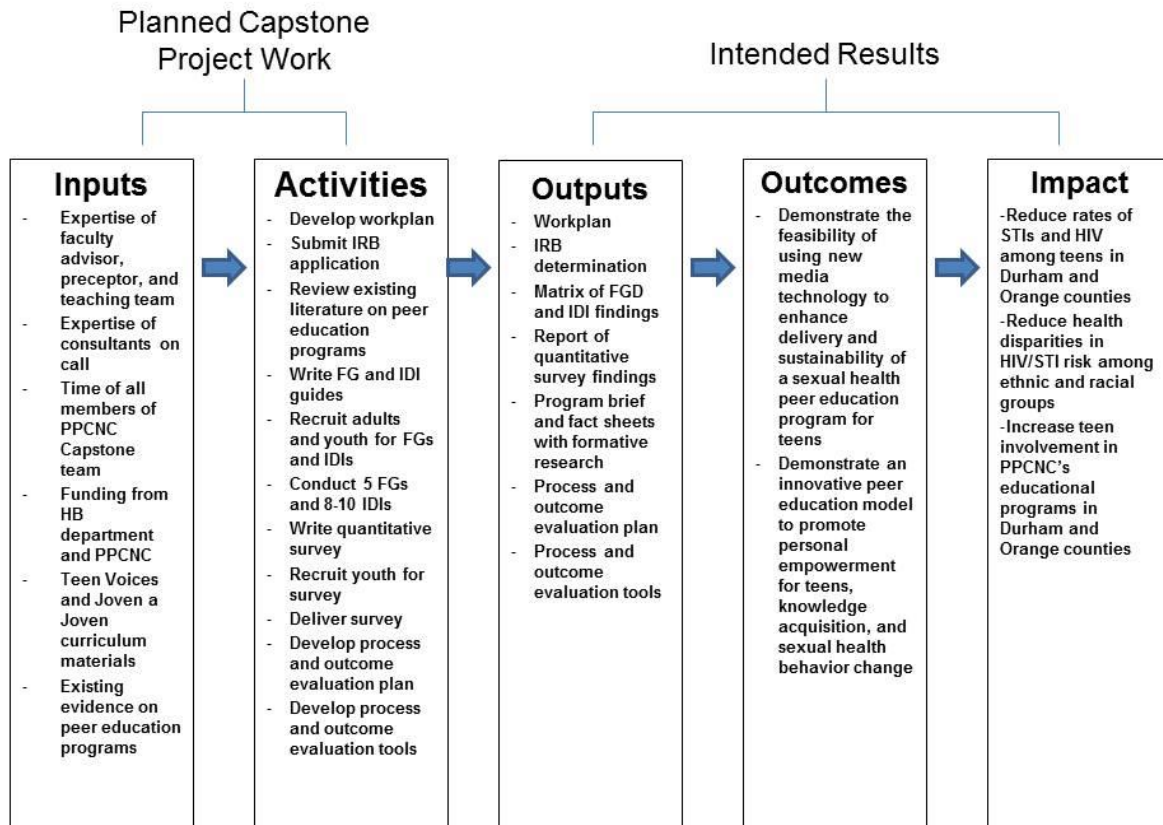
In addition to developing a method of evaluating PPCNC's current peer education programs, the Capstone team determined how to best utilize new media technologies to reach teens and sustain youth leadership and involvement with PPCNC. We aimed to assess the strengths of peer education programs and the feasibility of expanding the structure of PPCNC's current peer education programs to incorporate new media technologies. This includes expanding the current curriculum of *Teen Voices* to include a project-based component that combines SRH education with information about how to use new media projects for peer health promotion in the digital age. Based on formative research (including a literature review, focus groups, in-depth interviews, and a quantitative survey) we found that these projects should involve educating participants in the use of technologies, such as a project-specific websites, interactive forums, blogs, twitter and Facebook pages to stay engaged in *Teen Voices* and to share the SRH information learned in *Teen Voices* with a larger audience. Although PPCNC also runs the *Joven a Joven* program, the PPCNC Capstone team focused specifically on the *Teen Voices* program due to the time constraints for the Capstone work, the limited Spanish proficiency of the Capstone students, and PPCNC's current interest in evaluating and expanding the *Teen Voices* program.

The Capstone team began this project in May 2012 with resources that included: the expertise of the preceptor, faculty advisor, teaching team, and consultants on call; the time of all key personnel involved in the project; funding from the Department of Health Behavior and PPCNC; *Teen Voices* curriculum and evaluation materials; and existing evidence from peer education programs. Activities performed in the completion of the deliverables for PPCNC peer education staff included: development of a project work plan; submission of an Institutional Review Board (IRB) application; review of existing

peer education literature; development of both qualitative and quantitative instruments; recruitment of participants to complete focus group discussions (FGDs), in-depth interviews (IDIs), and quantitative surveys; and creation of an evaluation plan and its associated process and outcome evaluation tools. Final deliverables disseminated among stakeholders at PPCNC included: an evidence-based table of key literature, a matrix and report of focus group discussion and in-depth interview findings, a program brief and fact sheets presenting formative research results, a process and outcome evaluation plan, and evaluation tools for the existing *Teen Voices* program. Our logic model in Figure 1 illustrates the sequence of activities involved in producing these deliverables and their expected results.

This summary report aims to: 1) provide a background on the SRH issues facing youth in North Carolina, peer education programs, and media use in adolescent health projects; 2) provide a rationale for the Capstone project; 3) describe each of the key activities performed and deliverables produced, as well as relevant findings and recommendations for each; and 4) discuss lessons learned from the Capstone experience.

Figure 1: PPCNC Capstone Logic Model



II. Background

Unplanned pregnancies and rates of STIs, including HIV are high among teens in central North Carolina, specifically in Durham and Orange counties and adversely impact the quality of life for affected youth. Despite an overall decline in North Carolina's teen pregnancy rate over the past decade, there remains a need to address teen pregnancy and other adverse SRH outcomes among teens. In 2011 the teen pregnancy rate in Durham County decreased by 12% from 2010 (APPCNC Durham County, 2011) and decreased by 25% in Orange County since 2010 (APPCNC Orange County, 2011). However, North Carolina still ranks 14 out of 50 states for the highest rates of adolescent pregnancies (APPCNC, 2011). Adolescent motherhood puts young women at risk for educational underachievement and poorer economic circumstances (Boden, Fergusson, & John Horwood, 2008; Hofferth, Reid, & Mott, 2001).

In addition to unplanned pregnancy, North Carolina adolescents have high rates for STIs

including HIV/AIDS. During 2011 and 2012, 15-19 year olds represented 32.8% of all chlamydia and 24.8% of all reported gonorrhea cases in North Carolina (NC DHHS, 2012). In 2009, North Carolina was ranked 8th highest in the country for new HIV diagnosis and 11th highest in the country for AIDS diagnoses. In 2010, adolescents comprised 22.9% of HIV cases, an increase from 15.9% in 2006 (NC DHHS, 2011).

Peer education Programs

Peer education is one approach to delivering adolescent health programs that seek to reduce the rates of teen pregnancy and STIs. Peer education programs train youth to be knowledgeable about selected health topics, effectively disseminate this information to their peers, and model desired health behaviors to promote positive behavior change among their peers.

When grounded in theory, peer education programs may be effective in modifying psychosocial behaviors among adolescents. Outcomes of peer education programs should incorporate components from Health Behavior theories such as, Social Cognitive Theory, Diffusion of Innovations Theory, and the Theory of Normative Social Behavior (Real & Rimal, 2007; Wight, 2007). The constructs of Diffusion of Innovation and Normative Social Behavior theories provide a mechanism to increase the acceptability of performing healthy SRH behavior. The constructs of Social Cognitive theory can be incorporated into SRH interventions to increase participants' active engagement in the material and improve interpretation, storage, and utilization of the information received during peer education training (Caron, Godin, Otis, & Lambert, 2004; Castelli, Goss, Scherer, & Chapman-Novakofski, 2011). Additionally, role model stories, observational learning, and tactics to improve self-efficacy in these peer education programs increase their effectiveness over didactic programs (Caron, Godin, Otis, & Lambert, 2004; Castelli, Goss, Scherer, & Chapman-Novakofski, 2011).

The experience of peer-to-peer information exchange can result in positive outcomes for peer educators. Peer education programs have been found to increase youth engagement with prescribed curricula (Damon, 1984). Peer educators benefit from the information and skills learned during the

training as well as from the leadership experience itself (Ochieng, 2003). Overall, the peer education model empowers peer educators, assists them in learning skills related to helping, cooperating, listening, and communication, improves self-esteem, and encourages pro-social behavior (Caron et al., 2004; Damon, 1984; Topping, 2005; Wight, 2007). These skills give peer educators the confidence and tools to protect themselves against risk factors for a variety of negative health outcomes beyond those targeted in the peer education training (Scales, 2009).

While peer-led SRH programs have been proven to increase SRH knowledge (J. D. Fisher, Fisher, Bryan, & Misovich, 2002; Forrest, Strange, & Oakley, 2002), they may have a minimal impact on long-term sexual behavior change (Ochieng, 2003). Therefore, assessing the effectiveness of a peer education model for SRH intervention demands the following areas of consideration: the impact of the intervention on behavior change; the duration of the impact of the intervention; and the suitability of a peer education model compared to an adult-led education model. Brief duration of the impact of interventions is a potential pitfall of the peer education model since it relies on the continuous dissemination of knowledge and model behavior among youth to influence peers. Peer education programs may cause a significant increase in SRH knowledge and preventative behavior immediately following the intervention; however, this effect may wane over time and result in only minimal impact on long-term sexual behavior (H. H. Fisher et al., 2011; J. D. Fisher et al., 2002; Ochieng, 2003). This trend can be explained in part by a tapering off of peer-leader engagement in peer-educator activities (Ochieng, 2003). Additionally, peer educators' influence over their peers decreases over time if they fail to practice healthy behaviors, thereby losing credibility among youth (Ochieng, 2003).

The effectiveness of peer-led education is partially due to its ability to address certain topics better than adult-led education as youth can be more receptive to information communicated from their peers than from adults (Damon, 1984). Delivering SRH interventions using a peer education model uniquely addresses teen relationships, resulting in peer-initiated sexual norms that promote lower risk sexual behaviors (Mellanby, Newcombe, Rees, & Tripp, 2001). Peer educators also play a key role in modeling desired skills and creating group norms that support healthy behaviors (DiClemente et al.,

2004). In short, adult-led education delivered in a classroom setting is not as well-positioned as peer-led education to change sexual norms and effectively model skills.

Tailoring peer education programs to specific populations has been shown to improve the effectiveness of peer education. Specifically, intervention materials targeted to participants of different races, ethnicities, genders and ages improves program compatibility and effectiveness (H. H. Fisher et al., 2011; Ito, Kalyanaraman, Ford, Brown, & Miller, 2008). In particular, gender-specific training activities that address the different social and cognitive functions of young men and women enhance benefits of peer education (Aarons et al., 2000; DiClemente et al., 2004).

PPCNC currently directs the *Teen Voices* program in Durham and Orange Counties based on the peer education model. *Teen Voices* recruits male and female high school students, ages 14-18, from Durham and Orange Counties to be peer educators. Over the course of 12 weeks, participants complete a 40-hour training program that covers a variety of social, sexual, and health related topics relevant to teens. By the conclusion of these training sessions, participants become key sources of medically accurate SRH information for their peers. Participants may earn up to \$300 if they complete the required training sessions and 30 one-on-one peer outreach interactions within the 12-week timeframe (PPCNC, 2012).

Use of New Media Technology

New media technology is defined as digitally formatted products and services that operate using software applications, the Internet, mobile and/or broadcast networks. They are characterized by on-demand information and entertainment, as well as real-time connectivity and interactivity (e.g. videos, cell phones, Twitter, etc.). These technologies can be used to enhance SRH peer education programs in a variety of ways by: increasing peer educators' engagement with the program; reducing the time needed to deliver intervention materials (Klein & Card, 2011); improving confidential delivery of sensitive information (Ito et al., 2008); enhancing ability to target information to different audiences (H. H. Fisher et al., 2011; Ito et al., 2008); and increasing the delivery of interactive information via engaging quizzes, web activities, user-initiated text message programs, and online games (Downs et al., 2004; Evans,

Edmundson-Drane, & Harris, 2000; H. H. Fisher et al., 2011). Social networking websites are another form of emerging media technology that could be useful for delivering SRH information to peers and improving advocacy skills for delivering this information to a larger audience; however, there is a lack of formal evidence supporting their effectiveness for this purpose.

Successfully integrating new media technology in an adolescent SRH program curriculum requires maintaining a collaborative learning element. Collaborative learning occurs when social interaction elicits questions and rich discussion among participants, and this interaction increases retention of information (Kreijns, Kirschner, & Jochems, 2003). A review of computer-supported learning environments found that many computer-based learning modules neglect this aspect of collaborative learning; these modules are in need of interactive, structured, and leader-facilitated learning components to create this collaboration (Kreijns et al., 2003). An example of an application that incorporates these interactive features well is a website (i.e. the *Keep it Real* web platform designed by Tortolero et al. or the computer-assisted instruction modules designed by Evans et al.) that includes components such as videos or interactive modules, role model stories, and games or activities that have been proven to help youth retain SRH information, improve their knowledge about SRH, and reduce the prevalence of high risk sexual behaviors (Evans et al., 2000; H. H. Fisher et al., 2011; Ito et al., 2008; Roberto et al., 2007; Tortolero et al., 2010). Although there are no specific findings supporting the use of websites in peer education programs, evidence shows that websites can be used to enhance other types of SRH education programs (Marsch et al., 2011, Evans et al. 2000, adolescent health service provider in-depth interviews).

Blogs may be another appropriate avenue to communicate with a wide range of young people about SRH issues (Baker & Moore, 2008; Hanson, 2011; Reich, Subrahmanyam, & Espinoza, 2012), and theory suggests that young people who participate in the blog-writing process benefit from increased knowledge and awareness of SRH issues (Baker & Moore, 2008). While the literature provides limited evidence to support the effectiveness blogs, they can be used throughout peer education programs as a tool for youth to synthesize the information that they learn and disseminate it to a wider audience.

Text message services have also proven effective as avenues for delivering concise SRH

information such as reminder messages, and short advice phrases (Levine, McCright, Dobkin, Woodruff, & Klausner, 2008; Lim et al., 2012; Wright, Fortune, Juzang, & Bull, 2011). The Adolescent Pregnancy Prevention Campaign of North Carolina currently operates a SRH information text service that utilizes this approach.

Other organizations in North Carolina and the United States have already set precedents for integrating new media technology in their peer education programs. Examples include: maintaining a social media presence on Facebook and Twitter; monitoring interactive youth forums on websites; and developing tumblr feeds, videos and other SRH resources created for teens.

While many of the seminal studies with media technology use randomized controlled trials with strong internal validity, the generalizability of this work to young people in North Carolina is limited. Youth who visit PPCNC and those who are the targets of evidence-based interventions using media technology may differ significantly from other youth in their community because they have sought SRH services from clinics. They may have a greater baseline awareness of SRH issues than their peers or may be more likely than their peers to participate in risky sexual behaviors (Ito et al., 2008). Therefore, teens who visit these clinics are self-selecting and likely different from their youth peers but it is unclear if these differences are protective or risk factors for STIs and unplanned pregnancies. Peer education programs like *Teen Voices* should utilize new media technologies to reach out to a wider audience beyond peer educators or those who visit PPCNC.

Teen Voices has the potential to add to the body of practice-based evidence related to the effectiveness of peer education models for SRH interventions; however, very few process or outcome evaluation measures have been developed for the program. An evaluation plan and tools for the existing *Teen Voices* program are needed to assess the impact of the program on various cognitive and behavioral outcomes among peer educator participants. Furthermore, integrating new media technology into *Teen Voices* may increase the number and variety of opportunities to collect evaluation data, improve the training process, and allow peer educators to reach larger audiences with their messages. Potential media enhancements to the *Teen Voices* program needed to be first tested for their acceptability through focus

group discussions, in-depth interviews, and quantitative survey questions. Results from this formative research complement the scientific literature by informing which types of new media technologies local youth would most like to see incorporated into PPCNC’s peer education programs and the means by which they would most like it to be incorporated.

III. Deliverables

The PPCNC Capstone team produced six deliverables throughout the course of the Capstone work. The following tables outline in detail these six deliverables including: the deliverables’ formats and purposes; all activities performed to produce the deliverables; key findings from the deliverables; and recommendations for future use of the deliverables. Although it is not explicitly stated in the following tables, our Capstone team received frequent feedback on our work from the Capstone Preceptor, Faculty Advisor, and the Teaching Team throughout the process.

Deliverable I: Literature Review	
<i>Format:</i>	One ten-page narrative report written in Microsoft Word One evidence table written in Microsoft Excel (1 sheet, 23 sources)
<i>Purpose:</i>	To systematically review current peer education programs for adolescent SRH relevant to our population, paying particular attention to incorporation of new media technology, and to present those findings to the preceptor and other key stakeholders
<i>Activities:</i>	<ol style="list-style-type: none"> 1. Determined purpose, process, and format for conducting the literature review 2. Decided which literature (academic/peer reviewed, gray/media based) to present by using key terms: youth, teens, adolescents, peer education, sexual and reproductive health, HIV prevention, public health, health communication, technology, blogging, internet, social media, social behavior theory 3. Read and understood what the authors presented 4. Evaluated ideas, research design and methods, results of the study, and materials used from each peer education program presented in the literature 5. Synthesized literature to describe the content and provide a critical analysis of the material in an evidence table format with the following parameters: Title; Author/Year; Design/Comparison Group(s); Population/ Setting; N (sample size); Brief Intervention Overview (include dose); Targeted Behaviors; Theoretical Constructs Targeted (Theory Used); Duration; Measures; Attrition Rate/Retention Rate; Outcomes; Quality; Notes; Intervention Modules 6. Wrote ten-page narrative report based on key findings from the evidence table 7. Final draft of the evidence table was submitted to PPCNC 8. Final narrative report was included in the Capstone Summary Report and submitted to PPCNC
<i>Key Findings:</i>	<ul style="list-style-type: none"> • Peer education is a successful means to deliver SRH information to young people • Peer education programs use new media technology in the form of games, online

	journaling or blogging, and web-based, tailored education modules to enhance information delivery and interactivity of sessions
<i>Recommendations:</i>	<p>Recommendation to PPCNC peer education staff for conducting a literature search:</p> <ul style="list-style-type: none"> • Define key words for literature search and potential areas of research to look in (i.e. health communication, public health, sexual and reproductive health) • Look at databases of evidence-based programs and articles • Read abstracts and omit less relevant articles • Research various references and “cited by” pages for relevant articles • Compile report in table format for ease of both writing and disseminating the information but delete any columns that may be less relevant to the purpose of the literature review <p>Recommendations to PPCNC peer education staff for using the evidence table:</p> <ul style="list-style-type: none"> • Use as evidence and reference literature for future grant proposals, <i>Teen Voices</i> summary reports and presentations, and academic papers • Refer to scientific literature to guide future changes to <i>Teen Voices</i>, existing PPCNC peer education programs, or new PPCNC peer education programs • Continue to add to evidence-based table from literature in new publications and conferences

Deliverable II: Matrix of Focus Group and Semi-structured Interview Findings	
<i>Format:</i>	One table written in Microsoft Excel
<i>Purpose:</i>	To systematically collect feedback from key stakeholders about key elements of program expansion to include new media technology.
<i>Activities:</i>	<ol style="list-style-type: none"> 1. Identified key stakeholders to include in focus groups and in-depth interviews (i.e. parents, guardians, educators, adolescent health service providers) 2. Drafted questions for semi-structured interview and focus group discussion guides 3. Piloted guides with youth (two male and two female past <i>Teen Voices</i> participants) and adult stakeholders (two <i>Teen Voices</i> past participants’ parents, one adolescent service provider) to assess format, clarity of questions, and time to complete interviews and focus groups 4. Applied for IRB approval 5. Resubmitted IRB with revisions 6. Observed <i>Teen Voices</i> class session 7. Conducted four focus groups with youth (one with program females, one with program males, one with non-program females, and one with non-program males) and one focus group with parents 8. Conducted six in-depth interviews with professionals who work in youth development 9. Summarized key themes from interviewer notes and audio files and compiled results in a matrix 10. FGD and IDI guides were submitted to PPCNC for potential use with other populations (e.g. Fayetteville) 11. Qualitative data from the themes matrix were incorporated in the Program Brief and Fact Sheets (Deliverable IV)
<i>Key Findings:</i>	<ul style="list-style-type: none"> • Youth, parents, and service providers trust PPCNC and think highly of the <i>Teen Voices</i> program • Youth value the <i>Teen Voices</i> sessions as a way to meet with their peers

	<ul style="list-style-type: none"> Youth enjoy the in-class sessions and materials provided by PPCNC Parents and youth were cautious about using new media technology if it compromised anonymity or inhibited them from talking to peers face-to-face <i>Teen Voices</i> participants want to stay involved as alumni in the program after their training is complete
<i>Recommendations:</i>	<p>Recommendations to PPCNC peer education staff for using the FGD and IDI guides:</p> <ul style="list-style-type: none"> Adapt FGD and IDI guides from those provided by the Capstone team Pilot test guides with a small number of participants to ensure that the question wording and content is clear (ask participants if they understand the question, if they would change any question wording, and how they would answer the question if they were asked during an interview) Have a note-taker write notes during the interviews or discussions and write a summary of these notes immediately after the FGD or IDI. This would be useful if transcription and coding is too time-consuming or not necessary given the purpose of the qualitative research <p>Recommendations to PPCNC peer education staff for integrating results from the FGDs and IDIs into peer education programs:</p> <ul style="list-style-type: none"> Since didactic <i>Teen Voices</i> sessions were the least appealing method of SRH information delivery according to past participants of <i>Teen Voices</i>, interactive activities should be maintained as part of the <i>Teen Voices</i> program sessions. The use of certain new media technologies could enhance <i>Teen Voices</i> sessions by increasing the variety of interactive session components Parents should be involved in the planning and implementation of any new media initiatives related to communication of SRH information between <i>Teen Voices</i> participants and their peers. Buy-in from both youth and their parents will be critical to the success of these new media initiatives

Deliverable III: Quantitative Survey Results	
<i>Format:</i>	One ten-page summary report, created from Google Drive, including data tables and charts/graphs
<i>Purpose:</i>	To systematically collect feedback from participants to assess attitudes toward program expansion and present findings to preceptor organization.
<i>Activities:</i>	<ol style="list-style-type: none"> Drafted questions for surveys (eight closed-ended, two open-ended questions) Created digital version of the survey on Google Drive Sent survey to 36 male and female past program participants through email Collected survey data (47% response rate) Conducted descriptive analysis of survey data Presented participant responses to questions in narrative, table, and chart/graph form in a summary report Quantitative data from the summary report were incorporated in the Program Brief and Fact Sheets (Deliverable IV)
<i>Key Findings:</i>	<ul style="list-style-type: none"> Most youth wanted to maintain the current program timing (of three hours per session once per week) and would like to see group rather than individual projects incorporated into <i>Teen Voices</i> Photovoice, blogging, video production, creating and managing websites, public service announcements (PSAs), and podcasts were their top technology choices for a group project

	<ul style="list-style-type: none"> Youth most wanted to have photographers, filmmakers, writers, and graphic designers speak at different sessions
<i>Recommendations:</i>	<p>Recommendations to PPCNC peer education staff for implementing future quantitative surveys on new media technologies:</p> <ul style="list-style-type: none"> Adapt future surveys about technology projects in <i>Teen Voices</i> to this quantitative survey model. In particular, using Google Drive to deliver surveys to youth is easy for youth to access and has user-friendly analytical support (e.g. it can provide graphs of response rates after the survey is closed) The response rate for this survey was lower than ideal and could be improved in the future by offering greater incentives for participation, calling participants before sending out the survey to explain its purpose, and calling non-responding participants to remind them to complete the survey. These suggestions are based on Dillman's methods to increase response rates for paper-based surveys (Dillman et al, 2009) <p>Recommendations to PPCNC peer education staff for integrating results from the quantitative survey into peer education programs:</p> <ul style="list-style-type: none"> Establishing a PPCNC peer education program alumni group would create an opportunity to provide new media skills training to program alumni, with the added benefit of keeping these teens engaged with the SRH education program curriculum for a longer period of time.

Deliverable IV: Program Brief and Fact Sheets	
<i>Format:</i>	<p>One four-page program brief in both PDF and Microsoft Word formats</p> <p>Three 2-4 page fact sheets tailored for stakeholder groups in both PDF and Microsoft Word formats</p>
<i>Purpose:</i>	To inform key stakeholders on <i>Teen Voices</i> programs and PPCNC technology programs by synthesizing findings from focus groups, interviews, surveys and literature review
<i>Activities:</i>	<ol style="list-style-type: none"> Developed a detailed outline of findings from current programs, literature, focus groups, and interviews Conducted a search of current sex education programs in central NC (and related programs) using technology to deliver information (and focusing on PPCNC programs for further background information) Created a four-page program brief (including results from focus groups, in-depth interviews, quantitative survey, and EBI table) for preceptor and internal PPCNC use Created a two-page fact sheet (including results from focus groups, in-depth interviews, and EBI table) for adolescent health service providers Created a two-page fact sheet (including results from focus groups and quantitative survey) for participants of the Teen Voices focus group and their parents Created a two-page fact sheet (including results from focus groups) for non-Teen Voices youth Provided PPCNC with the final version of the Program Brief via email Provided stakeholders (focus group and interview participants) with appropriate fact sheets via email
<i>Key Findings:</i>	<ul style="list-style-type: none"> This document is a versatile tool that demonstrates the positive attitudes that participants, parents, and other stakeholders have towards <i>Teen Voices</i> It also provides evidence to help gain support for expanding the program to include new media technology
<i>Recommendations:</i>	Recommendations to PPCNC peer education staff for distributing and using these documents:

	<ul style="list-style-type: none"> • Distribute these documents (or adapt them for distribution as necessary) to all stakeholders involved in <i>Teen Voices</i> to provide them with a snapshot of the benefits of Peer Education and the <i>Teen Voices</i> program in particular • Use these documents to build partnerships with community organizations <p>Recommendations to PPCNC peer education staff for integrating recommendations from these documents into peer education programs:</p> <ul style="list-style-type: none"> • Teen Voices participants should be taught to apply the skills and information they have learned in Teen Voices sessions to reach a broader audience. These advocacy skills can expand the reach of the peer educators, improve their communication skills and provide them with training in using new media for information delivery. • An alumni program should be established to give participants the opportunity to remain involved in PPCNC activities after the completion of Teen Voices. Activities could include recruiting new peer educators and participating regularly scheduled sessions for alumni that will teach them new media and advocacy skills.
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Deliverable V: Process and Outcome Evaluation Plan	
<i>Format:</i>	One 32-page report including narrative and figures in both Microsoft Word and hard-copy formats
<i>Purpose:</i>	To describe the steps involved in conducting the process and outcome evaluation of the current <i>Teen Voices</i> peer education program and provide recommendations for the evaluation of an expanded program
<i>Activities:</i>	<ol style="list-style-type: none"> 1. Created outline for evaluation plan 2. Drafted intended use and users section: clarifying stakeholders and the purpose(s) of the evaluation 3. Drafted program description section: provided a narrative description of the program, explained the theory driving the program, included a logic model 4. Drafted evaluation focus: explained the focus of the evaluation, delineated the criteria for evaluation prioritization and included a discussion of feasibility and efficiency 5. Drafted methods section: identified evaluation indicators and performance measures, data sources and methods, as well as roles and responsibilities 6. Drafted analysis and interpretation plan: clarified how information will be analyzed and described the process for interpreting the results 7. Drafted use, dissemination, and sharing plan: described plans for use of evaluation results and dissemination of evaluation findings 8. Drafted recommendations section: recommended how evaluation plan can be utilized in case that the <i>Teen Voices</i> program is changed 9. Provided PPCNC with the narrative evaluation plan in electronic format and also in an evaluation binder that includes the Process and Outcome Evaluation Tools (Deliverable VI)
<i>Key Findings:</i>	<ul style="list-style-type: none"> • A pre-test, post-test evaluation design without a comparison group is most feasible for the current <i>Teen Voices</i> staff to implement given the program's available resources • A process and outcome evaluation will be conducted to assess changes in knowledge, attitudes, and self-efficacy (cognitive outcomes) and delay of sexual intercourse, contraception use, and risky sexual behavior (behavioral outcomes) • Evaluation will be conducted by PPCNC staff

<i>Recommendations:</i>	<p>Recommendations to PPCNC peer education staff for using the <i>Teen Voices</i> process and outcome evaluation plan:</p> <ul style="list-style-type: none"> • Conduct the evaluation for all <i>Teen Voices</i> cohorts, starting in 2014, as described in the evaluation plan, tools, instruction guides, and evaluation timeline • Every five years, starting in 2019, conduct a comprehensive analysis of evaluation results from the previous five years (look across years at all evaluation results, compile salient results in a program brief format) and make any necessary adjustments to the program goals, program activities, and evaluation plan
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Deliverable VI: Process and Outcome Evaluation Tools	
<i>Format:</i>	Web forms, print materials, Microsoft Excel spreadsheet
<i>Purpose:</i>	To provide PPCNC peer education staff with evaluation tools to assess the current <i>Teen Voices</i> program
<i>Activities:</i>	<ol style="list-style-type: none"> 1. Drafted six process evaluation tools 2. Drafted one outcome evaluation tool 3. Drafted evaluation tool instructions and scoring sheets 4. Provided PPCNC with evaluation tools and instructions in electronic format and also in a binder that includes the Process and Outcome Evaluation Plan (Deliverable V) and instructions for the use and scoring of each tool
<i>Key Findings:</i>	<ul style="list-style-type: none"> • Statistical programs are not available at PPCNC and all evaluation data will need to be collected and analyzed using Excel • All participant contact sheets were converted to Google Drive format so that participants can fill them out on the phones or computers and results can automatically be uploaded in chart form
<i>Recommendations:</i>	<p>Recommendations to PPCNC peer education staff for using the process and outcome evaluation tools:</p> <ul style="list-style-type: none"> • Use the evaluation tools as described in the instructions guide, evaluation plan, and timeline for each cohort, beginning in 2014. • Input data as quickly as possible after each data collection point in order to maintain the evaluation activities and continually analyze data to adjust the program as necessary.

IV. Discussion

The following section provides an outline of the strengths and limitations of Capstone stakeholder engagement, lessons learned from the Capstone experience, the impact of the Capstone work on PPCNC, the impact of the Capstone work on the field of adolescent sexual and reproductive health, and recommendations for next steps for PPCNC.

Strengths and Limitations of Stakeholder Engagement

Key stakeholders for this Capstone work included PPCNC peer education staff, youth who participated in the *Teen Voices* program, parents of youth who participated in *Teen Voices*, youth who had

not participated in the *Teen Voices* program (non-program youth), and adolescent health service providers and educators throughout North Carolina. Engaging these individuals throughout our project, gave us valuable opportunities to learn more about the larger context of the project, tailor deliverables to stakeholder needs, and ensure that *Teen Voices* remains appropriate and appealing to its target audience. We were successful in communicating and collaborating with program staff and intended beneficiaries throughout the Capstone project by scheduling regular meetings and incorporating stakeholder feedback into our work plan and deliverables.

At the beginning of each semester, we discussed the work plan and deliverable activities with our preceptor to ensure their usability and relevance for the ongoing work at PPCNC. As a result of these discussions, we edited our work plan in the spring semester to better reflect our preceptor's vision of new media technology and advocacy projects at PPCNC and to more directly align our project with the strategic goals of PPCNC. We scheduled bi-weekly meetings with our preceptor either via telephone, Skype, or in-person. These meetings were used to communicate next steps, provide project updates, and to discuss specific deliverables as they were produced. In-person meetings proved the most useful means of communication when developing our process and outcome evaluation plan and evaluation tools. Our preceptor met with us on campus at UNC on several occasions to discuss the CDC Evaluation Framework and provide us with feedback on feasible evaluation designs and data analysis procedures, and appropriate process and outcome evaluation objectives for the deliverables. We employed a user-focused evaluation approach by interfacing with individuals at PPCNC and our consultants on call, particularly with regard to creating an Excel sheet for future evaluation data analysis and integrating new media programs into *Teen Voices'* current work. Lastly, we kept the lines of email communication open throughout the year in order to provide updates of our weekly progress and address any immediate questions or concerns.

In addition to communicating with our preceptor, we also used email, telephone and in-person meetings, FGDs, and IDIs to establish contact with other stakeholders such as *Teen Voices* participants, parents of *Teen Voices* participants, local non-program youth, and adolescent service providers throughout North Carolina. We continued to involve these stakeholders in our project by providing them

with three tailored versions of a fact sheet outlining the findings from our formative research. These fact sheets were tailored so that each stakeholder received relevant and easily understandable information about his or her contributions to our research and PPCNC's work. For example, the program youth and parent fact sheet included information mainly from the FGDs and quantitative survey on expanding the program to include new media technology and an alumni group. The non-program youth fact sheet displayed FGD findings and general information about the peer education, while the provider fact sheet included literature review findings with key references and FGD and IDI findings. Additionally, we shared our FGD guides, quantitative survey template, and qualitative and quantitative results with PPCNC peer education staff. These materials have been used to answer similar research questions with participants in another PPCNC peer education program, *Teen Connections*, located in Fayetteville, North Carolina.

Despite these strengths, our Capstone team encountered several limitations in our ability to engage stakeholders. While we had extensive contact with our preceptor, we had limited contact with other key staff members at PPCNC, in particular those staff members involved in new media technology initiatives at PPCNC, those coordinating other peer education programs in North Carolina, and those assisting with the implementation of the *Teen Voices* program. Engaging these individuals would have given us a clearer understanding of PPCNC's goals around new media technology initiatives and existing technology services (i.e. SRH text lines). Contact with a broader range of stakeholders would have helped to ensure that our deliverables could be easily translated and applied to the ongoing work of other PPCNC peer education programs, such as *Teen Connections*, in Fayetteville, as well as future *Teen Voices* cohorts regardless of peer education staff turnover. To overcome this limitation, we presented the Capstone project deliverables and recommendations to the *Teen Connections* program coordinator, director of new media initiatives, and several other key peer education staff at PPCNC.

Our project would have also benefited from clearly voicing our shared understanding of the deliverable expectations and purposes throughout the year. The initial work plan and early formative research did not align closely enough to PPCNC's strategic plan and our preceptor's vision for the *Teen*

Voices program expansion. This issue could have been resolved by having more in-person meetings with our preceptor and PPCNC peer education staff members throughout the first semester and better communication about our shared understanding of the project's goals. As a result we scheduled more in-person meetings with our preceptor in the second semester, which helped tremendously in ensuring both our team and our preceptor continued the project with a common vision around our program brief, evaluation plan, and evaluation tools. We also became more familiar with the PPCNC strategic plan in the spring semester, enabling us to better tailor our deliverables to PPCNC's specific needs.

Lastly, we could have avoided these stakeholder engagement limitations by devoting more time to researching national Planned Parenthood affiliates' new media and technology initiatives and speaking with PPCNC's new media technology staff from the outset of the project. To address this limitation in the spring semester and to increase our knowledge of current technology programs, we reached out to our new media consultant on call, Deborah Levine. This step provided us with detailed information on national Planned Parenthood affiliates' current new media initiatives, giving us useful context as we finalized our deliverables and developed a presentation for PPCNC peer education staff members.

Lessons learned from the student Capstone experience

Overall, our Capstone team learned several significant lessons from this applied, course-directed experience. Most prominently, we learned how to balance on-the-ground realities of program implementation and evaluation with the rigorous scientific standards learned in the first year of the MPH program. For example, the qualitative guides, quantitative survey, and evaluation design were initially created using our classroom-based knowledge and were then further developed to better meet the needs of PPCNC.

Working with multiple diverse stakeholders provided us with the opportunity to tailor program deliverables to meet the needs of our different audiences. We learned how to highlight what is of greatest importance and interest to stakeholder and present these findings in the most appropriate way. For example, the initial draft of our presentation for PPCNC staff included information on the purposes and outcomes of all project deliverables. However, after consultation with our preceptor and learning more

about the interests of the PPCNC staff members attending the presentation, we edited our presentation to give more emphasis to the quantitative survey results and evaluation. As a result, the presentation was more valuable for PPCNC staff members in attendance and communicated our salient points more effectively.

Our Capstone team learned valuable public-health skills while working on each deliverable, including: conducting a systematic literature review and presenting findings in an evidence-based table; writing interview questions and FGD guides; pilot testing IDI and FGD materials and the quantitative survey prior to conducting each; analyzing qualitative data efficiently without first transcribing or coding data; writing tailored program briefs to advocate for peer education programs; writing an evaluation plan using the CDC framework; and developing process and outcome evaluation tools, scoring instruction guides, and Microsoft Excel macro-sheets. While we had discussed many of these topics and skills in our courses, we had limited experiences with each prior to our Capstone project. For instance, we learned the importance of pilot testing during our research methods courses to ensure the questions are understandable and will elicit the relevant results. In this project we were able to translate these skills into a real world setting by pilot testing each of our focus group discussion guides and in-depth interview guide. The feedback we received and the edits we made to these guides gave us a deeper appreciation of the value and necessity of pilot testing.

Additionally, while the UNC MPH program has taught us strong statistical analytical skills using SAS software, limited resources at PPCNC challenged us to develop evaluation tools using Microsoft Excel macro-sheets that tabulate and calculate results from the Behavior Risk Survey and Participant Satisfaction Survey. These skills will be invaluable to us as public health practitioners working in community-based settings.

Impact of this work on the Capstone partner organization

We aimed to produce project deliverables that would impact PPCNC in a meaningful, tangible, and sustainable manner. In our first three deliverables, we provided scientific evidence and formative research results to demonstrate the strengths of peer education programs, like *Teen Voices*, in

communicating SRH information to young people. This evidence could be used to illustrate the importance of *Teen Voices* and need for support to be included in future funding proposals. PPCNC can also use this evidence in *Teen Voices* summary reports, presentations, and academic papers to gain support for the current program and for future peer education initiatives.

The program brief (deliverable IV) can be distributed internally throughout PPCNC in order to promote the work of the current *Teen Voices* program, gain new project funding, and advocate for its possible expansion. PPCNC can use the program brief and fact sheets to provide an overview of peer education and *Teen Voices* to educate community organizations interested in partnering with PPCNC on the new media technology expansion. Lastly, they can be used to bolster PPCNC's recruitment efforts for the peer education programs, helping PPCNC educate a new, wider audience on the benefits of participating in peer education programs and *Teen Voices* in particular.

Moreover, in the evaluation plan and tools (deliverables V and VI, respectively), we provided a comprehensive plan to conduct a future evaluation of the existing *Teen Voices* program along with recommendations for program expansion. This evaluation plan is accompanied with tools to be used to collect data and assess the effectiveness of *Teen Voices*. The evaluation plan and tools contain detailed instructions for carrying out an evaluation and can be easily implemented by new peer education staff, thereby increasing their usability and sustainability.

In sum, these deliverables can be used to advocate for the program in the future, garner more funds, and expand the program, all of which are highly relevant to the success of peer education programs at PPCNC.

Impact of this work on the project's content area

By providing a plan and tools for the evaluation of a peer education SRH program in North Carolina, we have the potential to add to the peer education and SRH evidence-base. Indicators will specifically measure changes in knowledge, attitudes, and self-efficacy for practicing safer sex behaviors and delaying sexual intercourse. We were also able to demonstrate the strengths of the *Teen Voices* program in providing youth with medically accurate SRH information. Lastly, we provided PPCNC with

information on the acceptability of an alumni group focusing on new media technology skills to support their future implementation of this innovative program for the improvement sexual and reproductive health outcomes and advocacy skills among youth.

Recommendations for next steps and considerations for sustainability

Our team recommends that a future Capstone team, practicum students, or peer education staff at PPCNC conduct the evaluation of *Teen Voices* following our plan and using the accompanying tools within the next two years. The evaluation plan, tools, fact sheets and program brief will be disseminated to relevant stakeholders. In addition, the evaluation plan includes guidelines for disseminating evaluation results to appropriate stakeholders to further their engagement in the program and gain more support for *Teen Voices*. We also recommend that PPCNC peer education staff further engage past *Teen Voices* participants and parents by developing an alumni group, new media technology and advocacy skills trainings, and initiatives for past program participants to continually recruit new *Teen Voices* peer educators. These developments will meet the needs expressed by the youth participants during our formative research and will allow *Teen Voices* to grow and reach new populations of youth.

V. Conclusion

Our Capstone team benefited greatly from this project over the past year and we were given invaluable opportunities to apply the skills we learned in the classroom to a real-world, community-based setting. We developed meaningful relationships with staff at PPCNC and increased our knowledge about peer education and new media technology initiatives being used in SRH programs. We will be able to apply the knowledge and skill set developed during this project throughout our careers as public health practitioners and anticipate that our deliverables will support PPCNC in their mission to reduce rates of STIs, HIV, and unplanned pregnancy among teens in North Carolina for years to come.

VI. References

- Aarons, S. J., Jenkins, R. R., Raine, T. R., El-Khorazaty, M. N., Woodward, K. M., Williams, R. L., Clark, M. C., et al. (2000). Postponing sexual intercourse among urban junior high school students—a randomized controlled evaluation. *Journal of Adolescent Health, 27*(4), 236–247.
- Adolescent Pregnancy Prevention Campaign of North Carolina. (2011). Durham county, NC local information on the state of adolescent health and helpful resources. Retrieved April 22, 2013, from <http://www.appcnc.org/data/map/durham>
- Adolescent Pregnancy Prevention Campaign of North Carolina. (2011). North carolina statewide information on the state of adolescent health and helpful resources. Retrieved April 22, 2013, from <http://www.appcnc.org/data/map/northcarolina>
- Adolescent Pregnancy Prevention Campaign of North Carolina. (2011). Orange county, NC local information on the state of adolescent health and helpful resources. Retrieved April 22, 2013, from <http://www.appcnc.org/data/map/orange>
- Baker, J. R., & Moore, S. M. (2008). Blogging as a social tool: A psychosocial examination of the effects of blogging. *CyberPsychology & Behavior, 11*(6), 747–749.
- Boden, J. M., Fergusson, D. M., & John Horwood, L. (2008). Early motherhood and subsequent life outcomes. *Journal of Child Psychology and Psychiatry, 49*(2), 151–160.
- Caron, F., Godin, G., Otis, J., & Lambert, L. D. (2004). Evaluation of a theoretically based AIDS/STD peer education program on postponing sexual intercourse and on condom use among adolescents attending high school. *Health Education Research, 19*(2), 185–197.
- Castelli, D. M., Goss, D., Scherer, J., & Chapman-Novakofski, K. (2011). Healthy Outcomes for Teens Project: Diabetes Prevention Through Distributed Interactive Learning. *Diabetes Technology & Therapeutics, 13*(3), 359–364.
- Damon, W. (1984). Peer education: The untapped potential. *Journal of Applied Developmental Psychology, 5*(4), 331–343.

- DiClemente, R. J., Wingood, G. M., Harrington, K. F., Lang, D. L., Davies, S. L., Hook III, E. W., Oh, M. K., et al. (2004). Efficacy of an HIV prevention intervention for African American adolescent girls. *JAMA: the journal of the American Medical Association*, *292*(2), 171–179.
- Dillman et al. *Internet, Mail, and Mixed-Mode Surveys: The Tailored Design Method, 3rd Edition*. Hoboken: Wiley, (2009).
- Downs, J. S., Murray, P. J., Bruine de Bruin, W., Penrose, J., Palmgren, C., & Fischhoff, B. (2004). Interactive video behavioral intervention to reduce adolescent females' STD risk: A randomized controlled trial. *Social science & medicine*, *59*(8), 1561–1572.
- Evans, A. E., Edmundson-Drane, E. W., & Harris, K. K. (2000). Computer-assisted instruction: An effective instructional method for HIV prevention education? *Journal of adolescent Health*, *26*(4), 244–251.
- Fisher, H. H., Patel-Larson, A., Green, K., Shapatava, E., Uhl, G., Kalayil, E. J., Moore, A., et al. (2011). Evaluation of an HIV prevention intervention for African Americans and Hispanics: findings from the VOICES/VOCES community-based organization behavioral outcomes project. *AIDS and Behavior*, *15*(8), 1691–1706.
- Fisher, J. D., Fisher, W. A., Bryan, A. D., & Misovich, S. J. (2002). Information-motivation-behavioral skills model-based HIV risk behavior change intervention for inner-city high school youth. *Health Psychology*, *21*(2), 177.
- Hanson, K. (2011). Blog enabled peer-to-peer learning. *Journal of dental hygiene: JDH / American Dental Hygienists' Association*, *85*(1), 6–12.
- Hofferth, S. L., Reid, L., & Mott, F. L. (2001). The effects of early childbearing on schooling over time. *Family planning perspectives*, 259–267.
- Ito, K. E., Kalyanaraman, S., Ford, C. A., Brown, J. D., & Miller, W. C. (2008). “Let’s Talk About Sex”: Pilot Study of an Interactive CD-ROM to Prevent HIV/STIS in Female Adolescents. *AIDS Education and Prevention*, *20*(1), 78–89.

- Klein, C. H., & Card, J. J. (2011). preliminary efficacy of a Computer-Delivered HIV prevention intervention for african american teenage females. *AIDS Education and Prevention*, 23(6), 564–576.
- Kreijns, K., Kirschner, P. A., & Jochems, W. (2003). Identifying the pitfalls for social interaction in computer-supported collaborative learning environments: a review of the research. *Computers in human behavior*, 19(3), 335–353.
- Levine, D., McCright, J., Dobkin, L., Woodruff, A. J., & Klausner, J. D. (2008). SEXINFO: A sexual health text messaging service for San Francisco youth. *Journal Information*, 98(3). Retrieved from <http://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2007.110767>
- Lim, M. S. C., Hocking, J. S., Aitken, C. K., Fairley, C. K., Jordan, L., Lewis, J. A., & Hellard, M. E. (2012). Impact of text and email messaging on the sexual health of young people: a randomised controlled trial. *Journal of epidemiology and community health*, 66(1), 69–74.
- Mellanby, A. R., Newcombe, R. G., Rees, J., & Tripp, J. H. (2001). A comparative study of peer-led and adult-led school sex education. *Health Education Research*, 16(4), 481–492.
- North Carolina Department of Health and Human Services. (2011). Epidemiologic Profile for HIV/STD Prevention & Care Planning, 2011. Retrieved from http://epi.publichealth.nc.gov/cd/stds/figures/Epi_Profile_2010.pdf
- North Carolina Department of Health and Human Services. (2012). North Carolina HIV/STD Quarterly Surveillance Report, 2011(4). Retrieved from <http://epi.publichealth.nc.gov/cd/stds/figures.html>
- Ochieng, B. M. N. (2003). Adolescent health promotion: the value of being a peer leader in a health education/promotion peer education programme. *Health Education Journal*, 62(1), 61–72.
- Planned Parenthood of Central North Carolina. (2012). Teen Voices. Retrieved October 26, 2012, from <http://www.plannedparenthood.org/centralnc/teen-voices-2827.htm>
- Real, K., & Rimal, R. N. (2007). Friends talk to friends about drinking: Exploring the role of peer communication in the theory of normative social behavior. *Health communication*, 22(2), 169–180.

- Reich, S. M., Subrahmanyam, K., & Espinoza, G. (2012). Friending, IMing, and hanging out face-to-face: Overlap in adolescents' online and offline social networks. *Developmental psychology, 48*(2), 356.
- Roberto, A. J., Zimmerman, R. S., Carlyle, K. E., Abner, E. L., Cupp, P. K., & Hansen, G. L. (2007). The effects of a computer-based pregnancy, STD, and HIV prevention intervention: A nine-school trial. *Health communication, 21*(2), 115–124.
- Scales, P. C. (2009). Reducing risks and building developmental assets: Essential actions for promoting adolescent health. *Journal of School Health, 69*(3), 113–119.
- Topping, K. J. (2005). Trends in peer learning. *Educational psychology, 25*(6), 631–645.
- Tortolero, S. R., Markham, C. M., Peskin, M. F., Shegog, R., Addy, R. C., Escobar-Chaves, S. L., & Baumler, E. R. (2010). < i> It's Your Game: Keep It Real:</i> Delaying Sexual Behavior with an Effective Middle School Program. *Journal of Adolescent Health, 46*(2), 169–179.
- Wight, D. (2007). Theoretical bases for teacher-and peer-delivered sexual health promotion. *Health Education, 108*(1), 10–28.
- Wright, E., Fortune, T., Juzang, I., & Bull, S. (2011). Text messaging for HIV prevention with young Black men: formative research and campaign development. *AIDS care, 23*(5), 534–541.