A Qualitative Analysis of Young Sexual Minority Men's Perspectives on Human Papillomavirus Vaccination

Mary A. Gerend, PhD,¹⁻³ Krystal Madkins, MPH,^{2,3} Shariell Crosby,^{2,3} Aaron K. Korpak,^{2,3}
Gregory Phillips II, PhD,^{2,3} Michael Bass, MS,² Magda Houlberg, MD,⁴ and Brian Mustanski, PhD^{2,3}

Abstract

Purpose: Men who have sex with men (MSM) are affected disproportionately by cancers caused by human papillomavirus (HPV). A safe and effective vaccine is available to prevent HPV infection, yet rates of HPV vaccination among young MSM are low. Guided by the Information, Motivation, and Behavioral Skills model, the purpose of this study was to identify young sexual minority men's perspectives on HPV vaccination.

Methods: Men ($N=29$) 18–26 years of age, who identified as gay, bisexual, or queer, completed a semistructured interview. Vaccinated ($n=9$) and unvaccinated men ($n=20$) were interviewed. The interview assessed knowledge, motivation, and behavioral skills related to HPV vaccination as well as relevant contextual factors (e.g., provider recommendation). Interviews were coded for recurring themes.

Results: Most participants were aware of HPV and the HPV vaccine; however, misconceptions and knowledge gaps were common with many believing that HPV vaccination was only for women. Motivational factors included perceived advantages (e.g., reducing risk of HPV-related disease) and disadvantages (e.g., stigma) of HPV vaccination, perceived threat of HPV-related disease, and subjective norms for HPV vaccination. Relevant behavioral skills included disclosure of sexual orientation and comfort discussing HPV vaccination. Concerns about vaccine cost, access, and convenience were salient barriers to initiating and completing the series. Encouragement from a health care provider was cited as the primary reason for receiving the HPV vaccine.

Conclusion: When developing interventions to increase HPV vaccination among young sexual minority men, it is important to address facilitators and barriers that reflect the unique needs of this population.

Keywords: HPV, human papillomavirus vaccines, men who have sex with men, psychosocial factors, sexual minority, young adult

Introduction

MEN WHO HAVE SEX WITH MEN (MSM) are affected disproportionately by cancers caused by human papillomavirus (HPV), such as anal cancer.¹ For example, risk of anal cancer is nearly 20 times higher among MSM relative to heterosexual men² and is substantially higher among HIV-positive MSM.^{3,4} A safe and effective vaccine for preventing HPV infection has been available for males in the United States since 2011.⁵⁻⁷ Routine HPV vaccination is currently recommended for all 11 and 12-year-old boys and girls, as well as MSM (up to age 26 years) who did not get vaccinated when they were younger.⁷⁻⁹ Nevertheless, HPV vaccine uptake among young MSM is less than optimal, with fewer than 40% initiating the series (i.e., receiving ≥ 1 dose of the 3-dose series).¹⁰⁻¹⁴ Although researchers have

begun to identify promising strategies for promoting HPV vaccination among young MSM,¹⁵⁻¹⁷ few evidence-based interventions are currently available.

Previous studies have identified facilitators of and barriers to HPV vaccination among young MSM.^{10,13,18-22} Many of these factors mirror findings observed in young adult women.²³⁻²⁵ For example, studies have found that lack of provider recommendation, low perceptions of vulnerability to HPV infection, and concern about cost are common barriers to HPV vaccination among young MSM.^{10,13,20,26,27} Barriers to HPV vaccine uptake that are unique to MSM (e.g., sexual identity disclosure and stigma concerns) have also been identified.^{13,18-20,27,28}

This study was conducted to inform interventions for promoting HPV vaccination among young sexual minority men. The study was guided by the Information, Motivation, and

¹Department of Behavioral Sciences and Social Medicine, College of Medicine, Florida State University, Tallahassee, Florida.

²Department of Medical Social Sciences, Feinberg School of Medicine, Northwestern University, Chicago, Illinois.

³Institute for Sexual and Gender Minority Health and Wellbeing, Northwestern University, Chicago, Illinois

⁴Howard Brown Health, Chicago, Illinois.

Behavioral Skills (IMB) model,^{29,30} which proposes that individuals engage in health behavior when they are adequately informed, are motivated to act, and have the appropriate behavioral skills and self-efficacy to do so. The motivation component consists of personal motivation (e.g., attitudes toward HPV vaccination, perceived vulnerability to HPV infection, and perceived severity of HPV infection) and social motivation (e.g., subjective norms for HPV vaccination and social support for HPV vaccination).³¹ Despite its success in informing numerous behavioral interventions for sexual health,³² the IMB model has not been used to design and evaluate HPV vaccine interventions.³⁰ The purpose of this study was to identify young sexual minority men's perspectives on HPV vaccination.

Methods

Participants and procedure

Participants were recruited through advertisements (ads) posted on Facebook and a local participant registry associated with the IMPACT LGBT Health and Development Program, which conducts translational research for improving the health of individuals in LGBT communities. Eligibility criteria were assigned male sex at birth; male gender identity; ages 18–26 years; self-identify as gay, bisexual, or queer; and currently live in the Chicago metro area. Participants were also required to own a cell phone and have used text messaging in the past 6 months. We used the Facebook self-service “Ad Manager” portal to publish paid ads with static images, a brief description of the study, and a link to the screening survey. Ads were displayed to people fitting the demographic eligibility criteria (e.g., ages 18–26, male, and “interested in men”). Facebook ads ran for 10 days and resulted in 762 clicks. Registry participants ($n=242$) were sent an email with a description of the study and a screener link. The screening survey was opened 106 times and completed by 74 participants, of whom 59 were eligible for the study.

Eligible participants were contacted by telephone to confirm eligibility and schedule an interview. Participants ($N=29$) were selected using a purposive sampling strategy to ensure diversity. Both vaccinated (i.e., participants who received ≥ 1 doses of the HPV vaccine; $n=9$) and unvaccinated ($n=20$) participants were interviewed. Participants completed a 30–45-minute face-to-face semistructured interview in downtown Chicago in August 2016. All participants provided written informed consent and permission to audio record the interview. Participants received \$40 for their participation. Interviews were transcribed verbatim. Study procedures were approved by the Institutional Review Board at Northwestern University.

Semistructured interview

The interview guide (see Supplementary Appendix SA1) was informed by the IMB model²⁹ and previous studies on HPV vaccination and MSM.^{10,13,19,21,33} Several questions were drawn from research by Wheldon et al., who examined young MSM's beliefs about HPV vaccination.²⁰ The interview first assessed awareness and knowledge of HPV infection and the HPV vaccine (i.e., the information component of the IMB model). Afterward, participants were asked to read a brief fact sheet,³⁴ which helped to ensure that they had a basic understanding of HPV vaccination before answering

the remaining questions. Participants were asked if they had received any doses of the HPV vaccine. Vaccinated participants were asked to describe their experience receiving the vaccine and factors affecting their decision to get vaccinated (e.g., “What motivated you to get vaccinated for HPV?”). The remainder of the interview included questions related to the motivation and behavioral skills components, as well as relevant contextual factors (e.g., provider recommendation for the HPV vaccine). Questions varied slightly if the participant had been vaccinated.

Statistical analysis

Descriptive statistics were computed for sociodemographic and background characteristics that had been assessed on the screening survey and during the interview (Table 1). Transcripts were imported into Dedoose (Socio-Cultural Research Consultants, LLC, Los Angeles, CA)

TABLE 1. PARTICIPANT SOCIODEMOGRAPHIC AND BACKGROUND CHARACTERISTICS ($N=29$)

	N (%)
Age, mean (SD)	22.66 (2.30)
Sexual orientation	
Gay	22 (76)
Bisexual	4 (14)
Queer	3 (10)
Race	
Asian	2 (7)
Black or African American	4 (14)
White	17 (59)
Multiracial	4 (14)
Other or unknown	2 (7)
Latino or Hispanic	
No	22 (76)
Yes	7 (24)
Chicago metro location ^a	
North side	24 (83)
South side	2 (7)
West side	2 (7)
Suburbs	1 (3)
Received any doses of the HPV vaccine?	
Don't know	1 (3)
No	19 (66)
Yes	9 (31)
No. of doses received ^b	
One dose	1 (11)
Two doses	2 (22)
Three doses	4 (44)
Don't know	2 (22)
HIV status	
HIV negative	24 (83)
HIV positive	1 (3)
Never tested	4 (14)
Source of recruitment	
Facebook	24 (83)
IMPACT registry	4 (14)
Friend referral	1 (3)

^aAs determined by participant ZIP code.

^bAssessed among nine participants who received at least one dose of the HPV vaccine.

HPV, human papillomavirus; SD, standard deviation.

and coded by two study team members. Using an iterative process,^{35,36} we created a codebook organized by the IMB model components.^{29,30} The lead author reviewed the interview guide and a random subset of interviews to generate a preliminary codebook, which was then updated after additional transcript review and discussion between coders. Theoretical constructs associated with each IMB component were assigned a primary code (e.g., Behavioral beliefs: advantages) and a secondary code (e.g., Peace of mind) to capture increasing specificity (Table 2). Any coding inconsistencies were discussed and resolved.

Results

Sample characteristics

Sample characteristics are provided in Table 1. On average, participants were 22 years of age. A majority (76%) of participants identified as gay. Fifty-nine percent of the sample identified as White, 14% as Black or African American, and 14% as multiracial. Approximately 25% of participants were Hispanic or Latino. One participant was HIV positive.

IMB model recurring theme: information

Knowledge of HPV infection. All but one participant had heard of HPV infection. Participants knew that HPV is transmitted through sexual activity and that there are different types or strains of the virus. Some participants associated HPV with genital warts and cancer in women, although there was confusion about the type of cancer (ovarian vs. cervical cancer). The most common misconception was that HPV affects women, but not men. Another common misunderstanding was that men are primarily “carriers” of the infection and do not experience symptoms or negative consequences from HPV. Most participants lacked specific details about how HPV is transmitted and were unaware of the connection between HPV and anal cancer. Although many men knew about the link between HPV infection and cancer in women, they were often shocked to learn that HPV could cause anal and oropharyngeal cancers in men. Several men expressed surprise and frustration about the lack of HPV testing for men.

Knowledge of the HPV vaccine. Approximately 20% of the sample had never heard of the HPV vaccine and vaccine knowledge varied across participants. The most common misconception regarding HPV vaccination was that only women could receive the vaccine. At the same time, several participants were aware that men could be vaccinated for HPV. Participants were unsure about whether the HPV vaccine is effective for men who have already been sexually active. They also had questions about the recommended number and timing of doses, typical age for receiving the HPV vaccine, and common side effects.

IMB model recurring theme: motivation

Behavioral beliefs. Participants were asked about the perceived advantages and disadvantages of receiving the HPV vaccine (behavioral beliefs). Primary advantages included preventing HPV and reducing risk of HPV-related diseases, peace of mind, and protecting sexual partners. Participants acknowledged the physical and psychological health benefits of HPV vaccination and were enthusiastic about the ability to protect both themselves and their partner(s). Primary disadvantages

included side effects (e.g., pain), sexual disinhibition (i.e., concern that someone would become less inhibited in their sexual behavior after vaccination), and stigma (e.g., being labeled as promiscuous). Finally, some participants acknowledged the potentially limited efficacy of the vaccine for sexually active individuals and that getting vaccinated could reduce, but not eliminate risk of HPV infection. Participants had an easier time identifying the advantages (vs. disadvantages) of HPV vaccination.

Perceived threat. Although participants were not asked directly about the perceived threat of HPV (perceptions of susceptibility to and severity of HPV infection), many spontaneously shared relevant threat-related comments after reviewing the fact sheet. Participants often expressed surprise upon learning that nearly everyone will be exposed to HPV in their lifetime. Participants who were unaware of the link between HPV and cancer commented on the potentially serious consequences of HPV infection.

Motivating experiences. Among vaccinated participants, personal experience with genital warts was often cited as a reason for receiving the HPV vaccine. Although these men had been infected with at least one HPV type, they acknowledged that vaccination could protect them from other HPV types to which they had not yet been exposed. In addition, some vaccinated men attributed their decision to get vaccinated to the health-protective qualities of the vaccine.

Normative beliefs and descriptive norms. When asked about normative beliefs related to HPV vaccination, the large majority thought that most people in their lives would be supportive of them receiving the HPV vaccine. Participants had more difficulty identifying unsupportive referents. Those who did typically mentioned their parents (especially their father) or extended family members. Descriptive norms for HPV vaccination echoed perceptions that mainly women receive the HPV vaccine. Several participants mentioned having female friends or a sister whom they knew or suspected had received the HPV vaccine. Very few participants knew another gay man who had been vaccinated.

Social support from significant others. Among vaccinated participants, the primary social factor that motivated them to get vaccinated was a recommendation from a health care provider. Nearly all vaccinated participants mentioned the central role of the provider in their decision to receive the HPV vaccine. Some participants attributed their decision to a discussion with a family member (typically their mother). Nevertheless, most participants indicated that their parents had little to no involvement in their decision to get vaccinated.

IMB model recurring theme: behavioral skills

Disclosure of sexual orientation. Approximately two-thirds of the sample had discussed their sexuality with a health care provider. Some mentioned disclosing their sexual orientation on an intake form before the visit. Others shared that their sexuality became part of the discussion in the context of requesting an HIV/sexually transmitted infection (STI) test. Willingness to disclose their sexuality was intimately connected to the type of clinic at which they were

TABLE 2. RECURRING THEMES AND EXEMPLAR QUOTES ORGANIZED BY THE INFORMATION, MOTIVATION, AND BEHAVIORAL SKILLS MODEL

<i>Theoretical component</i>	<i>Primary code</i>	<i>Secondary code</i>	<i>Exemplar quote</i>
Information	Knowledge of HPV	Misinformation	I've heard it doesn't affect men, but they can transmit it. I don't know if that's true.
	Knowledge of the HPV vaccine	Knowledge gaps	I didn't know like it affected guys at all.
Motivation	Behavioral beliefs: advantages	Misinformation	I've always assumed it was geared toward women more than men.
		Knowledge gaps	So, if someone were to get a vaccine, but say they already have it (HPV), how does that work?
	Behavioral beliefs: disadvantages	Reduce risk of HPV, warts, and cancer	Not getting HPV and not developing any of the cancers or anything related to it.
		Peace of mind	Don't have to worry as much. One of the few STIs have vaccine for—click that one off the list.
	Behavioral beliefs: disadvantages	Protect partner(s)	Yeah like I care about my health, but I also care about other people's health too and I don't want anyone else to get infected or have to go through with something like that.
		Side effects	I imagine that there are some people who are more concerned about side effects. Some people may be more prone to them than others...
	Perceived threat	Sexual disinhibition	Just one I can think of is that, maybe now that the vaccine—you have the vaccine, a mindset might think, like, "Unprotected sex might be okay." Or, "You don't need to be as careful," or whatnot.
		Stigma	...some people will consider somebody very promiscuous. 'Oh, you're getting a vaccine because you're sleeping with multiple people,' and there's just a stigma associated with that.
	Motivating experiences ^a	Perceived likelihood	I didn't realize it was the most common. That's shocking. Also, it's a little, I don't wanna say frightening, but a little frightening how easy it is to transmit.
		Perceived severity	How it's very underrated... Cancer. That's serious.
Behavioral skills	Normative beliefs	Personal experience with HPV	I started developing symptoms (warts), I kind of had a suspicion that's what it was. I thought I wouldn't be really suited for the vaccine, but then my doctor said that it might actually help... Also, that there's other strains that you might not have that you might as well try to get covered for.
		Supportive referents	I have a very good relationship with my entire family. They all know I'm gay. No one cares one bit. I'm very fortunate. So if I were to say I was getting the Gardasil vaccine, they would be (very supportive).
	Descriptive norms	Unsupportive referents	Maybe my dad... Because he's just ignorant with regard to sexuality and vaccines and stuff like that. He's kind of a anti-government conspiracies person, so I don't really have a good relationship with him.
		Know someone who is vaccinated	I think my roommate... I have a female roommate and I'm pretty sure she has.
	Social support from significant others ^a	Health care provider	It was the doctor's recommendation. I honestly wouldn't have thought about it had he not recommended it.
		Family member	Talking to my mom. I don't know, I think she watched some commercial. I came home and she asked me if I knew about HPV and I was like, yeah a little bit, but not all the way and then we had like a little quick talk.
	Disclosure of sexual orientation	Health care provider	Well, it was weird at first because he's a family doctor, but I have to discuss it with him so he can know certain things to look out for. And yeah. It was cool... it was just weird for the first time speaking with him.
		With provider	I would feel completely comfortable, especially at this point.
	Comfort discussing the HPV vaccine	With family	I knew I had to go to a second doctor appointment, and part of me wanted to keep it to myself, but then it's gonna show up on the insurance bill, anyways, so I might as well bring it up so they don't get too concerned by it. Then I went to my mom, kind of, it was very much as it happened and just kind of nonchalant (she said) "Okay, make sure you do what you need to get done; that's all that really matters."
		Cost/health insurance	Probably the only thing that would stop me honestly is the cost.
Control/efficacy beliefs: external factors	Control/efficacy beliefs: external factors	Access	I think ease of access. I don't know how many hospitals or locations would have this vaccine or if it's accessible in that capacity.
		Convenience	Well, it was offered right there while I was getting the physical done. So I didn't even have to make a special trip or anything.

^aIncluded responses from vaccinated participants only. STIs, sexually transmitted infections.

being seen (e.g., lesbian, gay, bisexual, transgender, or queer [LGBTQ] friendly vs. general), as well as expectations about how the provider might respond. Some participants shared stories of providers seeming uncomfortable or awkwardly asking questions, whereas others described situations in which they felt stigmatized or judged. At the same time, several men shared positive experiences related to disclosing their sexuality to a health care provider.

Comfort discussing the HPV vaccine. The majority of participants said that they would be comfortable asking a provider for the HPV vaccine. Several participants said that they felt more prepared to discuss the vaccine after reviewing the fact sheet. Nevertheless, some expressed hesitation about asking a provider for the vaccine, especially if they had to discuss their sexuality. Participants acknowledged that their comfort level would vary depending on their relationship with the provider. For instance, participants seeing their childhood pediatrician were generally less comfortable asking for the vaccine. Some men questioned why their sexual orientation was even relevant, as the HPV vaccine is universally recommended.

Levels of comfort discussing HPV vaccination with their parents varied across participants. Similar to that with providers, comfort level often depended on the participant's relationship with their parents and whether they had disclosed their sexual orientation. Despite having a good relationship with their parents, participants acknowledged that they did not typically discuss sexual issues and thus talking about HPV vaccination could be awkward. Some participants covered by their parents' health insurance expressed concern about keeping their health-related decisions—including HPV vaccination—confidential. Parallel concerns with respect to pre-exposure prophylaxis (PrEP) for HIV prevention were also mentioned. Conversely, other participants did not view discussing HPV vaccination with a parent as a barrier.

Control/efficacy beliefs. When asked about external factors that would facilitate or hinder their ability to get vaccinated, three main themes emerged: cost, access, and convenience. Although a majority of participants had health insurance, concern about paying for the vaccine was extremely common as most were unsure about whether the vaccine is covered. Uninsured participants felt that it was unlikely they would get vaccinated if the cost was prohibitive. Although a few participants said that they would ask their primary care provider for the vaccine, most did not know where they could receive the vaccine. When asked to identify what made it easier for them to receive the HPV vaccine, nearly all vaccinated participants cited the convenience of being offered the vaccine while at the clinic. Relatedly, participants suggested that coupling HPV vaccination with another reason for going to the clinic (e.g., HIV testing and PrEP follow-up) could increase accessibility. Participants were especially keen on getting vaccinated at a walk-in clinic or pharmacy, or if they were students, on campus. Conversely, participants acknowledged the inconvenience of having to receive three doses to complete the series.

Discussion

This study identified young sexual minority men's perspectives on HPV vaccination to inform future interventions for increasing HPV vaccine uptake. Guided by the IMB

model, we identified key beliefs and contextual factors relevant to young sexual minority men's decisions about HPV vaccination. The findings were largely consistent with the literature,^{10,13,18–22,27,28} although new insights also emerged. The themes that emerged reflect some of the unique challenges faced by young sexual minority men.

The findings were generally consistent with previous studies conducted in other areas of the country (e.g., Boston and Florida).^{18,20} The participants were largely unaware that men can experience negative health consequences from HPV infection, namely anal cancer.^{18,20,26,27} They also recognized the importance of health care providers in facilitating HPV vaccination.^{10,13} At the same time, some men acknowledged the desire to keep their sexual identity hidden from providers and/or parents and were concerned that asking for the vaccine could lead to stigma or negative judgment. Concerns about vaccine cost, access, and convenience also surfaced as salient barriers to both initiating and completing the series.²⁰

Several new findings were observed. After reviewing the handout, participants often expressed dismay and frustration about the inability to get tested for HPV. This finding suggests that young sexual minority men may be especially receptive to HPV vaccination when informed about the current lack of HPV testing for men. Although anal cancer screening for MSM is offered in several large cities across the United States, disagreement remains about which screening procedures should be used and which subgroups may benefit from such screening.³⁷ We also noted that the majority of participants were enthusiastic about receiving the HPV vaccine in a pharmacy setting, which could be a promising outlet for increasing vaccine coverage.³⁸ Although previous studies have found that having a partner with genital warts prompted receipt of the HPV vaccine,²⁰ we did not replicate this finding. Finally, some men drew a connection between getting vaccinated for HPV and taking PrEP. Similarities were seen in terms of the important, but limited protection these preventive strategies provide as well as the potential stigma associated with each (i.e., being viewed as promiscuous).³⁹

These findings have important implications for interventions designed to increase HPV vaccination among young MSM. Beyond clarifying misinformation and addressing knowledge gaps, it will be essential for interventions to provide important details about the series (e.g., timing and number of doses, and efficacy). As concerns about vaccine cost were prominent, programs should emphasize that HPV vaccination is covered by most types of health insurance for MSM through age 26. Likewise, given the high cost of the vaccine (\$170–\$250 per dose), it will be essential to direct uninsured men to clinics that provide the HPV vaccine for free/reduced cost and share information about patient assistance programs.⁴⁰ As men were particularly interested in receiving the HPV vaccine from pharmacies, it may be useful to incorporate online tools such as the "HealthMap Vaccine Finder," which identifies all pharmacies offering HPV vaccination for a given ZIP code.⁴¹ Combining HPV vaccination with other preventive health visits such as HIV testing or PrEP initiation/maintenance may also facilitate uptake.^{15,18,20,28} Finally, interventions should foster behavioral skills related to sexual orientation disclosure and increase self-efficacy to discuss the HPV vaccine with a health care provider or parent.

Direct-to-consumer HPV vaccine interventions (as described in the preceding section) could be coupled with

complementary multilevel interventions such as public health messaging campaigns and clinic-based efforts. For example, although provider recommendation is the strongest predictor of HPV vaccination⁴² and was the most important motivating factor among vaccinated participants in this study, relatively few sexual minority men have received such a recommendation.^{10,13} Providers working with sexual and gender minority individuals should be encouraged to offer the HPV vaccine to all of their eligible patients. In addition, clinics should incorporate evidence-based strategies for increasing HPV vaccination such as reminder/recall messages that alert patients when they are overdue for the vaccine and electronic immunization information systems that allow providers to easily track and update the vaccination status of their patients.^{42–44} Another promising strategy for increasing HPV vaccine uptake among young MSM is offering HPV vaccination at STI/HIV testing and treatment centers.^{15,18,20,28}

Limitations

It is important to acknowledge the limitations of this study. The sample was relatively small and one of convenience; thus, the findings may have limited generalizability. For example, the study participants may have been more open about their sexuality or more knowledgeable about sexual health relative to the general MSM population. Furthermore, participants were recruited primarily from the North Side of Chicago, an area with higher socioeconomic status neighborhoods. The findings may not extend to rural sexual minority populations, HIV-positive men, or MSM who do not identify as gay, bisexual, or queer. Additional research should identify important facilitators of and barriers to HPV vaccination in these subgroups. As evidence-based interventions for HPV vaccination are lacking, future research is needed to identify promising practices for encouraging young MSM to receive the HPV vaccine.

Conclusion

Although rates of HPV vaccination among adolescents in the United States have been steadily increasing,⁴⁵ they remain well below the target goal of 80%. Until this goal is achieved, maximizing catch-up vaccination remains a valuable focus for intervention efforts. Findings from this study provide an important foundation for the development of future interventions promoting HPV vaccination among young sexual minority men. Adopting a theoretically informed approach that draws on the lived experience of MSM will help to ensure that interventions are tailored appropriately for this population.

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Disclaimer

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Author Disclosure Statement

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Supplementary Material

Supplementary Appendix SA1

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Address correspondence to:

Mary A. Gerend, PhD

Department of Behavioral Sciences and Social Medicine

College of Medicine

Florida State University

1115 West Call Street

Tallahassee, FL 32306-4300

E-mail: mary.gerend@med.fsu.edu