RELATIONSHIPS AMONG SUBJECTIVE NORMS, GENDER, ACCULTURATION AND THE INTENTION TO ENGAGE IN RISKY SEXUAL BEHAVIORS AMONG US-BASED NIGERIANS

By

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ABSTRACT OF THE DISSERTATION

Relationships among Subjective Norms, Gender, Acculturation and the Intention to Engage In Risky Sexual Behaviors among US-Based Nigerians

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Rationale: This study aimed to disentangle the complex interrelationships among subjective norms (SN), gender, acculturation, and the intention to engage in risky sexual behavior (RSB) among US-based Nigerians. It is well documented that Nigerian cultural norms inadvertently expose Nigerians in Nigeria to RSB in the forms of multiple sexual partnerships (MSP) and non-condom use. The extent to which Nigerians intend to continue with these culturally accepted beliefs and practices after immigration to the US, and the extent to which gender, level of acculturation, and SN are associated with RSB intentions among this group were unknown. It is crucial to understand this phenomenon because caring for negative outcomes of RSB such as unplanned pregnancies, STIs and HIV cost approximately $47 billion annually in the US.

Method: The Theory of Planned Behavior (TPB) and the Acculturation Framework were used to explore hypothesized relationships. After approval from Rutgers University IRB for this cross-sectional, correlational study, 154 adult were recruited from five US-based Nigerian community Listservs.

Results: SN, PBC, and attitudes about condom use were independent predictors of condom use intention. SN by itself contributed 7% of the variance. Although SN was not an independent predictor of MSP intention, it was correlated to MSP intention. PBC

for MSP, sexual preference, singleness, and assimilation were independent predictors of MSP. Overall, TPB constructs were significantly related to condom use and MSP intentions.

Conclusion: This is the first known study that has explored the intricate interrelationships among SN, gender, acculturation, and the intention to engage in RSB among US-based Nigerians. Findings indicated that the TPB propositions that asserted direct relationships between SN and intentions were empirically adequate. Conversely, the theorized interrelationship among background factors, SN, and intention were not supported. The theorized relationships of background factors as direct antecedents to SN and indirect antecedents to intention were less clear. Further studies are warranted. This study revealed important cultural subgroup differences in levels of acculturation, SN, and RSB intentions that underscore the premise that Blacks are not a monolithic group. These differences indicated that interventions targeted at US-based Nigerians might contribute to the prevention of RSB within this population. Findings laid the foundation for future interventions designed to modify behavioral intentions and SN that fostered RSB in at-risk groups, such as immigrants. The goal is to foster safer sexual behaviors and reduce negative consequences and associated treatment costs of RSB in this group.

Preface/Acknowledgements

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Chapter 1

The Problem

Risky sexual behaviors (RSB) are unsafe sexual practices such as inconsistent or lack of condom use during sexual intercourse. RSB is additionally defined as engagement in sex with serial or concurrent multiple sexual partners (Centers for Disease Control and Prevention [CDC], 2013b). Both types of RSBs potentially place individuals at high risk for negative health outcomes such as sexually transmitted infections (STIs), unintended pregnancies and human immunodeficiency virus (HIV). These negative health outcomes results in significant global economic burden. For example, the direct cost of caring for STIs in the United States (US) is approximately $16 billion annually (CDC, 2013a).

An estimated $11 billion is spent annually in caring for unintended pregnancies and births across the US (CDC, 2012), and the medical care for those infected with HIV is approximately $20 billion annually (CDC, 2010). Theorists postulate that one important factor that contributes to RSB is a person's intention to engage in RSB (Ajzen, 1985; 2012). Therefore, a person's actual engagement in sex with multiple partners or in unprotected sex is directly determined by one's intention to engage in these behaviors.

Risky Sexual Behaviors among US-based Nigerians

A recent CDC report on RSB indicated that male and female Blacks in the US had higher numbers of multiple sexual partners (MSP) compared to White and Hispanic men and women (Chandra, Mosher, & Copen, 2011). Additionally, consequences of RSB, such as unplanned pregnancies, HIV and STIs are higher in Blacks compared to other racial groups (Jemmott, Jemmott, & O'Leary, 2007; Jemmott et al., 2008; Jemmott et al.,

2010; Jemmott, Jemmott, Fong, & Morales, 2010; Mosher, Jones, & Abma, 2012). A barrier to fully understanding RSB among Blacks is that data from diverse Black groups, such as African Americans, Black persons of Caribbean descent, and Blacks from African countries, are frequently grouped together and analyzed as if Blacks are a monolithic group. For example, in Partridge and Proano's investigation of Rhode Island immigrants (2010), findings revealed that 10% of Rhode Island immigrants were from the Africa countries of Ghana, Liberia and Nigeria, and, that STIs and HIV infections were observed more frequently among this group compared to other immigrants groups in Rhode Island. Of relevance is that each African country has its own cultural beliefs and practices that likely influences engagement in RSB (Asare & Sharma, 2010). Therefore, further research is needed to delineate within group sexual practices for each particular African ethnic group.

US-based Nigerians are immigrants from West Africa, and they make up the majority of US-based African immigrants (American Immigration Council, 2012; Capps, McCabe, & Fix, 2011; McCabe, 2011; U.S. Census Bureau, 2011). Notably, Nigeria has the third highest HIV burden in the entire world, and it is well documented that Nigerians who reside in Africa engage in and are at high risk for RSB (Eluwa et.al, 2012; Ike, & Aniebu, 2007; Mberu & White, 2011). For example, condom use is not desirable among many Nigerians due to their concerns and beliefs that this practice may cause health problems, decrease sexual interest, reduce enjoyment, and inhibit spontaneity (Essien et al., 2010; Ike & Aniebue, 2007; Odu et al., 2008; Odu & Oluwasegun, 2011). Therefore, while it might be assumed that US-based Nigerians continue their RSB practices after immigrating to the US, no study has exclusively explored this health concern among

US-based Nigerians (Ike & Aniebue, 2007; Rosenthal et.al, 2003).

Intention to Engage in Risky Sexual Behavior

Most theories of health behavior share a belief that the single best predictor of an individual's behavior such as RSB is simply his or her intention to engage in that behavior. Most health behavior studies were focused on particular health risks, such as risky sexual behaviors, which often have a "social reaction" component for study participants. In these instances, assessing one's intention to engage in behaviors that pose a health risk to individuals minimizes socially desirable responses to questions about specific risky behaviors (Webb & Sheeran, 2006). Therefore, the focus of this study is one's intention to engage in RSB rather than one's actual engagement in RSB.

Intention to engage in a behavior is an indication of an individual's inclination to engage or not engage in a behavior; and it is the immediate antecedent to the intended behavior (Ajzen, 1985, 2012). For example, the intention to engage in sexual intercourse with multiple sexual partners (MSP) may lead to actual sexual activities with multiple sexual partners. Similarly, the intention to use condoms may lead to actual condom use (Asare &Sharma, 2010). Although one's intention to engage or not engage in RSB is posited to be directly related to one's actual engagement or non-engagement in RSB, to date the extent to which US-based Nigerians intended to engage in RSB was unknown prior to this study. This study addressed this gap in knowledge. Importantly, medium-to-large changes in behavioral intention led to significant changes in behavior (Webb & Sheeran, 2006). Therefore, the identification of factors that influenced RSB intention in US-based Nigerians was warranted in order to develop and test interventions to reduce this health risk in this population. Subjective norms, gender, and acculturation are the

antecedents to RSB that were examined in the study.

Antecedents of Intention to Engage in Risky Sexual Behavior in US-Based Nigerians

Subjective Norms

Subjective norms are defined as the perceived social pressure to engage or not engage in a behavior, and they are comprised of one's normative beliefs about the expectations of important referents (e.g., sexual partners, family, and friends) regarding a particular behavior combined with an individual's motivation to comply with the expectations of these important referents (Ajzen, 1985, 2012). Nigerian cultural norms, and the associated social pressures to conform to particular norms, affect the dynamics of sexual behavior among Nigerian men and women (Adedimeji, Omololu, & Odutolu, 2007). In Nigeria, engaging in sex with concurrent multiple sexual partners (MSP) is prevalent, and the cultural norm is that this is expected and acceptable among Nigerian men, but not acceptable among Nigerian females (Dibua, 2010; Ike & Aniebue, 2007).

The premise that Nigerian's beliefs about the expectations of others regarding sexual behaviors motivates them to comply with these expectations is supported by the empirical literature and informs the proposed study. For example, in a qualitative exploration of masculinity scripts and abstinence-related beliefs of rural Nigerian youth (Izugbara, 2008), the risky sexual behavior of engaging in sex with multiple partners was couched within the context of norms of masculinity, particularly those norms that 1) framed sexual activity as a central marker of being male, 2) helped young males assert their virility and gain respect among their peers; 3) viewed male sexuality as naturally dominant and aggressive, 4) associated maleness with power and leadership; and 5) portrayed male sexual activity as normal, proper, and permissible.

In a similar study (Smith 2007) that explored modern marriage and extramarital sex beliefs in a sample of Nigerian men and married couples, many participants, including men and women in the sample, expressed the belief that men naturally need or want multiple sexual partners (MSP) and that involvement in predominantly male peer groups encourage or reward extramarital sex; that is, the norms or social pressure of these peer referent groups motivate Nigerian men to engage in sex outside of marriage. Likewise, Adedimeji and colleagues' (2007) examination of HIV risk perception and constraints to protective behavior among sexually active young men in Nigeria illuminated social norms and associated gender socialization that encourage women to be docile and men to be domineering in sexual matters.

Unprotected sex is another risky sexual behavior that could be influenced by one's subjective norms. In the male dominated Nigerian culture where men are expected to control condom use, men will likely use condoms when socio-cultural norms support condom use and may likely not use condoms if not supported by social norms (Essien, et al., 2010; Oyediran et al., 2010). For example, in a study that examined risk perception and protective behavior in a sample of Nigerian young men and women (Adedimeji et al., 2007), one explanation for male participants' lack of use of protection during sexual encounters was grounded in a masculinity social norm and need to sustain their "masculine" self-image among their important referent groups. On the other hand, females in this study indicated that an inability to negotiate safe sex because of cultural norms about gender relations and gender-based power disparities limited their ability to transfer their knowledge of risks into protective behavior during sexual encounters.

Indeed, additional research revealed that, because of power dynamics and pressures to conform to gender-based sexual roles, many Nigerian females accept this double standard because they lack or are deprived of condom negotiation skills (Mitsunaga et al., 2005; Essien, et al., 2010; Izugbara, 2008; Owoaje & Uchendu, 2009; Oyediran et al., 2010; Smith, 2007; Sunmola, 2005; Sunmola, Olley, & Oso, 2007; Udoh et al., 2009). Moreover, females are expected by their Nigerian male counterparts to remain submissive even with unprotected sex, and they are frequently considered as troublesome partners who do not trust their male partners if they request the use of condoms (Essien, et al., 2010).

The cultural norms and social pressures that drive the motivation to have sexual encounters with multiple sexual partners or without the use of condoms have been examined in groups of Nigerians and described, and it is well documented that Africans migrate to their destination country with their cultural beliefs and practices (Asare & Sharma, 2010; Blake, Ledsky, Goodenow, & O'Donnell, 2001; Chaumba, 2011; Kerani et.al, 2008; Okie, 2007). Importantly, sexual behavior subjective norms directly influence one's intentions to engage in RSB, such as engaging in sex without the use of condoms or with multiple sexual partners (Ajzen, 1985, 2012), and there was a dearth of data about the subjective norms regarding RSB among US-based Nigerian immigrants and the extent to which these norms influenced their intent to engage in RSB.

While masculine gender scripts and sexual norms may not resonate universally among all Nigerians, inattention to the normative influences, i.e., subjective norms, that organize immigrant groups' intention to engage in risky behaviors points to a potential danger for not gaining a clear understanding of this important driver of risky sexual

behaviors or to the ineffectiveness of safe-sex interventions for these populations in the US. Thus, there was an important need to examine the subjective norms in US-based Nigerians and the independent associations of these norms to RSB intentions. The knowledge gained will aid in the development of a more comprehensive model of RSB normative influences to inform future interventions designed to modify normative beliefs and pressures to comply with RSB expectations of referent groups and reduce RSB intention in this immigrant group.

Gender

For US-based Nigerians, gender may be an important background factor that indirectly influences RSB intention through its effect on one's subjective norms (Ajzen, 1985, 2012). As discussed previously, traditional Nigerian cultural norms about gender relations and gender-based power disparities allow for gender role sexual behavior inequalities in the form of dominant male sex roles and submissive female sex roles (Chaumba, 2011; Gbadebo, & Ishak, 2007; Goldenberg, Strathdee, Perez-Rosales, & Sued, 2012; Hawkes & Hart 1993). In addition, the Nigerian traditional cultural norms permit multiple sexual partners (MSP) among men and allows the male to control condom use during sexual activity (Mberu & White, 2011; Omorodion, Gbadebo, & Ishak, 2007; Oyediran, Feyisetan, & Akpan, 2011; Rosenthal et.al, 2003). The premise that gender is an important antecedent factor to consider regarding subjective norms and RSB intention is supported by research that revealed gender differences in RSB in other populations. For example, across racial groups in a study of Asians, Blacks, Hispanics and Whites, females reported higher percentages of unprotected sex compared to males while males reported higher rates of casual sex than female participants (Schwartz et al.,

2011). Although research in other populations pointed to an important relationship between gender and RSB, the complex nature of this relationship had not been examined among US-Based Nigerians prior to this study. In addition, the relationship between gender and intention to engage in RSB had not been examined in this population prior to this study.

Acculturation

An individual's level of acculturation could be an important personal characteristic that may be related to the intention to engage in RSB in US-based Nigerians. Acculturation is defined as "a process by which immigrant ethnic groups are exposed to, and gradually adopt the ways of the dominant culture" (Tong, 2013, p. 561). Acculturation theorists posit that individuals vary in the extent to which they adopt the cultural practices of the host country. This proposition indicated that cultural customs and norms about sexual behaviors may differ among US-based Nigerians, depending on their level of acculturation. Immigration to a new country exposes individuals to a new and unfamiliar social environment with cultural norms that are often different from their traditional norms. This adjustment to a new culture was likely a period of a great deal of ambiguity for immigrants, and the theorists have postulated that the presence of ambiguity enhanced normative influences (Cialdini, 1993; Moscovi, 1976). Implicit in this premise is the view that, as one acculturates into host country and experiences less ambiguity, traditional normative influences may be replaced with the customs and norms of the host culture (Berry, 1997). Yet, the nature of acculturation in US-based Nigerians and the extent to which their level of acculturation was associated with RSB subjective norms and intention to engage in RSB was unknown prior to this study.

It was plausible that less acculturated Nigerians may be at higher risk for RSB intentions since they may have retained their normative beliefs and pressures regarding sexual behavior. This knowledge was necessary in order to determine targeted subgroups within a population (e.g., less acculturated US-based Nigerians) for RSB reduction interventions. Therefore, an important aim of this study was to explore the complex relationships among acculturation, subjective norms, and intention to engage in RSB among US-based Nigerians.

The Mediating Role of Subjective Norms

Subjective norms may serve as a mediator in the relationship between background factors (i.e., gender, acculturation) and intention to engage in RSB (Ajzen, 2012). Specifically, personal characteristics, such as level of acculturation and gender, may influence one's intention to engage in RSB by directly affecting RSB subjective norms in US-based Nigerians. That is, the effect of gender and acculturation on RSB intention among US-based Nigerians may be through their effects on RSB subjective norms. For example, in a study of fertility intention, the age at which women intend to have children was directly mediated by the subjective norms surrounding child bearing (Ajzen & Klobas, 2013). That is, subjective norms *explained how* the relationship between age and fertility intentions occurred in these women.

Multitudes of studies examined the association between subjective norms and behavioral intention and demonstrated significant relationships. It was likely that subjective norms about RSB was also associated with RSB intention in US-based Nigerians. However, there were no studies that examined subjective norms as an operant mechanism for the relationships between acculturation, gender and RSB among

US-based Nigerians prior to this study.

The question that was raised by this gap in knowledge was, *does subjective norms explain how gender and acculturation are associated with RSB intention in this population?* Thus, one aim of this study was to gain an understanding of the independent associations between subjective norms and RSB intention, gender and RSB intention, and acculturation and RSB intention in US-based Nigerians. In addition, a further aim was to examine subjective norms as an operant or underlying mechanism by which gender and acculturation are associated with RSB intention in US-based Nigerians.

Purpose of the study

The purpose of this study was to disentangle the complex interrelationships among subjective norms, gender, acculturation, and intention to engage in RSB among US-based Nigerians.

Statement of the Problem

What are the interrelationships among subjective norms, gender, acculturation and intention to engage in risky sexual behaviors among US-based Nigerians?

Sub-problems

1. Is there a relationship between subjective norms and the intention to engage in risky sexual behaviors (lack of condom use and multiple sexual partners)
2. Is there a relationship between acculturation and the intention to engage in risky sexual behaviors (lack of condom use and multiple sexual partners) among US-based Nigerians?
3. Is there a relationship between gender and the intention to engage in risky sexual behaviors (lack of condom use and multiple sexual partners) among

US-based Nigerians?

4. Do subjective norms mediate the relationship between acculturation and the intention to engage in risky sexual behaviors (lack of condom use and multiple sexual partners) among US-based Nigerians?

5. Do subjective norms mediate the relationship between gender and the intention to engage in risky sexual behaviors (lack of condom use and multiple sexual partners) among US-based Nigerians?

Significance of the Study

Globally, RSB leads to negative health care outcomes such as unplanned pregnancies, STIs and HIV. The cost for caring for various RSB sequelae was approximately $47 billion annually in the US (CDC, 2010, 2012, 2013a). There was an important need to gain an understanding of the extent to which immigrant populations in the US contributed to the problem and associated costs of RSB. Nigerians are the largest US-based African immigrants in the US, have the third highest HIV burden in the World, and are known to engage in high risk sexual behaviors in their native country.

In addition, the cultural beliefs and risky sexual practices that may continue after immigration to the US may put them at risk for other sexually transmitted negative outcomes such as STIs, unplanned pregnancies, and HIV infection (Mberu & White, 2011; Omorodion et al., 2007). The extent to which Nigerian men and women intend to engage in risky sexual behaviors after immigration to the US, and the extent to which gender, level of acculturation, and RSB subjective norms are associated with their intentions were unknown prior to this study.

The aim of this study was to disentangle these complex relationships to gain an understanding of 1) the independent associations of each with RSB intention, and 2) the operant mechanisms by which gender and level of acculturation are associated with RSB intention. Subjective norms and RSB intentions are modifiable. Therefore, the knowledge gained from this study will aid in targeting interventions designed to modify faulty subjective norms and RSB intentions to appropriate groups of US-based Nigerians, e.g., males and those persons who are less acculturated. For example, gender-based and culturally appropriate interventions can be tested if findings revealed that subjective norms mediated the relationship between gender and RSB intentions in US-based Nigerians.

Thus, this study laid the foundation for future intervention work designed to modify behavioral intentions and subjective norms that fostered RSB in at-risk groups of US-based Nigerians (e.g., males and those less acculturated). The ultimate goal was to foster safer sexual behaviors and reduce the real and potential negative consequences and associated treatment costs of RSB in this immigrant group.

Chapter 2

Theoretical Framework and Literature Review

This chapter presents a discussion of the theoretical and empirical literature as it related to the specific determinants of the intention to engage in risky sexual behavior (RSB) among US-based Nigerians. First, determinants of RSB intention were presented as derived from the Theory of Planned Behavior (TPB) constructs, which were behavioral beliefs, attitudes, normative beliefs, subjective norms, control beliefs, perceived behavioral control (PBC), intention, and behavior. Secondly, an overview of

the acculturation framework is discussed in relation to background factors, such as acculturation and gender, which serve as antecedents to TPB constructs. Theoretical and empirical literature that supported proposed relationships among theoretical concepts are also presented in this chapter.

Section one presents a discussion of the TPB and acculturation theories as the theoretical frameworks that will guide this study. The second section presents a review of empirical literature that supports the relationships that will be tested among specific TPB concepts, gender and acculturation. The third section, which is a discussion of gaps in the empirical literature, presents a summary of the theoretical rationale for research questions, and delineates the study hypotheses that were tested. The final section, presents theoretical and operational definitions of constructs that were tested in the study.

The Theory of Planned Behavior (TPB)

Ajzen's (1985, 2012) TPB is an explanatory theory that is applicable to RSB and suitable for its theoretical significance as a framework for exploring RSB (Fawcett, 1999) among US-based Nigerians. The TPB had been extensively and successfully utilized to explore various behavioral intentions including RSB. TPB is also adaptable and applicable for use with individuals from various socio-cultural and racial backgrounds such as US-based Nigerians (Ajzen, 1985, 2012). The TPB proposes that theorized precursors such as intention influence behaviors such as RSB. Thus, the TPB was useful for explaining why the intention to engage in RSB and actual RSB occur. Although some RSB are spontaneous, they are not automatic; therefore, variables such as attitudes, subjective norms, and PBC are antecedents to the intention that result in RSB (Ajzen, 1985, 2012).

Behavioral Beliefs and Attitude

The TPB proposes that attitude toward RSB is the degree to which implementation of RSB is positively or negatively cherished. Attitude toward RSB is determined by accessible behavioral beliefs. Although an individual may hold many behavioral beliefs with respect to RSB, only a few of these beliefs are readily accessible at any given moment. These accessible beliefs together with subjective values of the expected outcomes determine the dominant attitude toward RSB. Therefore, behavioral beliefs are direct determinants of attitudes. In turn, attitudes are direct determinants of intention and intention is the immediate antecedent to behavior (Ajzen, 1985, 2012).

Normative Beliefs and Subjective Norms

One's normative beliefs refer to the perceived behavioral expectations of individuals who are important to the person, such as a spouse, friend or parent. TPB assumes that the strength of each normative belief is influenced by the motivation to comply with those important persons in our lives. Norms can either be injunctive (that is, others tell us what sexual behaviors are acceptable) or norms can be descriptive (that is, we learn acceptable sexual behaviors by observing how others behave). Various accessible normative beliefs combine with subjective norms about a particular behavior, such as RSB. The TPB posits that subjective norms is the perceived social pressure by those who are important in our lives (important referents) and whose opinions may influence us to engage or not to engage in RSB. In summary, normative beliefs influence subjective norms. In turn, subjective norms influence behavior through intention (Ajzen, 1985, 2012).

Control Beliefs and Perceived Behavioral Control

Perceived behavioral control (PBC) refers to people's perceptions of their capability to engage or not engage in RSB. It is assumed that PBC is determined by the complete set of accessible control beliefs that may expedite or inhibit RSB. Control beliefs are the perceived existence of powerful influences that may enable or hinder a person's engagement in a behavior. Successful avoidance of RSB is determined by a favorable intention not to engage in RSB and an adequate degree of behavioral control. Therefore, perceived behavioral control directly influences the intention to engage in RSB. To the extent that perceived behavioral control about RSB is correct, perceived behavioral control in concert with negative or positive RSB intention may be utilized to directly predict RSB (Ajzen, 1985, 2012).

Intention

TPB explicates that intention is an indication of an individual's inclination to engage or not engage in RSB. "Intention is the immediate antecedent of behavior" (Ajzen, 2012, p. 438). Conversely, attitude toward RSB, subjective norms about RSB, and PBC about RSB are immediate antecedents to intention (Ajzen, 1985, 2012).

Behavior

Behavior is the response to a decision to engage or not engage in RSB. Therefore, behavior is a function of the intention to conform to subjective norms and the perception of behavioral control that may expedite or hinder RSB (Ajzen, 1985, 2012).

Background Factors

In addition to its core focus on the formation of intentions and the

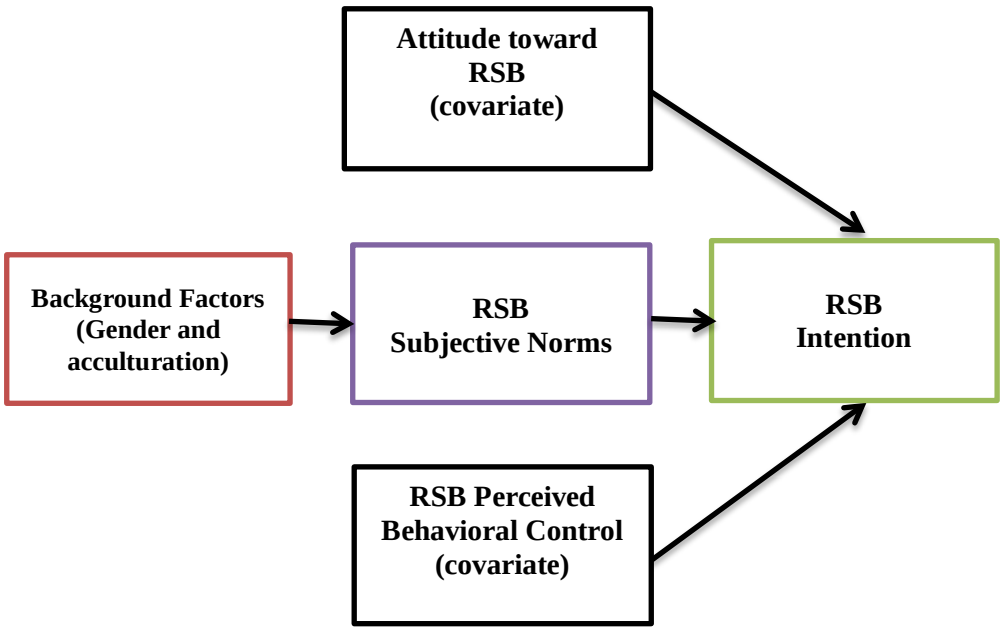
relationship between intentions and behavior, the TPB provides a link to personal characteristics and other background factors, such as gender and acculturation (Ajzen & Klobas, 2013). These background factors are postulated to influence intentions through their effects on subject norms, attitudes, and perceived behavioral control. That is, subjective norms, as a mediator, could be the underlying mechanism through which gender and acculturation influence RSB intention among US-based Nigerians.

T**PB Constructs Utilized for the Study**

The focus of this study was to disentangle the complex relationships among gender, acculturation, subjective norms, and RSB intentions among immigrant Nigerians in the US. Thus, background factors, subjective norms, and intention to engage in RSB were the TPB constructs examined in the study. Since attitudes and perceived behavioral control (PBC) also directly influence behavioral intentions, these constructs were measured and controlled for in the study in order to examine the independent associations of background factors and subjective norms with RSB intention. A diagram of the relationships that were tested in the study is provided below.

Figure 1.

The Theory of Planned Behavior Model Tested in the Study



Adapted from http://people.umass.edu/aizen/tpb.diag.html

Acculturation Framework

Acculturation refers to the method of embracing new behaviors and cultural practices that are essential for integrating into another culture's norms and practices (Hennessy-Burt et al., 2011). The acculturation framework explicates that individuals adapt to other cultures voluntarily, such as with emigration, or involuntarily, such as with being a political refugee. Acculturation is a dynamic strategy that occurs through the process of integration, assimilation, separation or marginalization. Assimilation occurs when individuals interact closely with other cultures at the expense of their heritage culture. An assimilated individual adopts the socio-cultural norms and traditions of the new host country but does not hold on to the identifying socio-cultural values of their country of origin (Berry, 1997; Berry et al., 2012; Sam & Berry, 2006).

Integration is a balanced strategy that results in the adoption of the host country's socio-cultural norms while still maintaining their traditional socio-cultural norms and traditions. Separation is the strategy that occurs when individuals strongly value and hold on to their cultural heritage. They avoid interaction with members of the host society and fail to adopt the host country's socio-cultural norms. Marginalization is like walking a tight rope between two cultures. Individuals are culturally marginalized when they are not interested in maintaining their traditional socio-cultural norms and traditions and at the same time, they are not interested in adopting the host country's cultural values (Berry, 1997; Berry et al., 2012; Sam & Berry, 2006).

It is well documented in cultural frameworks and empirical evidence that, traditionally, sexual behavior beliefs and norms differ by gender in the Nigerian culture as evidenced by gender-based sex role inequalities. Males are expected to be sexually dominant and are permitted to have multiple sexual partners while females are expected to be sexually submissive to one sexual partner (Chaumba, 2011; Goldenberg et al., 2012; Hawkes & Hart 1993; Mberu & White, 2011). Generally, males are expected to control condom use (Oyediran et al, 2011), while condom use negotiation is not an expected female sexual role (Omorodion et al., 2007; Rosenthal et.al, 2003). Acculturation theorists postulate that Nigerians who immigrate to new cultures are likely to adopt the cultural norms of the new host culture or hold onto their traditional cultural beliefs and norms. Thus, it was plausible that Nigerians who migrated to the US with particular sexual behavior cultural norms and beliefs could adopt the *safe sex* cultural norm that is prevalent in US culture or retain their traditional sexual behavior cultural norms in varying degrees (Akinde, 2013). It was also plausible that level of acculturation was an

important background factor and antecedent to RSB intention among US-based Nigerians. Thus, the acculturation framework also served as a guide for the examination of these relationships in the study.

Literature Review

Subjective Norms and Intention

In this section, a synthesis and analysis of empirical evidence supporting the theorized relationship between the TPB constructs of subjective norms and intention to engage in RSB among US-based Nigerians are presented. The literature search, which was delimited to studies that examined subjective norms and intention, yielded nine theory-based studies. For each study, the study design, sample characteristics, and relevant findings are summarized in Table 2.1.

In seven of the nine studies reviewed, subjective norms predicted condom use intention (Asare & Sharma, 2010; Heeren et al., 2007, 2009; Liu et al., 2013; Peltzer & Oladimeji, 2004; Protogerou et al., 2013; Wang, 2013). A further analysis by Heeren, et al. (2007) indicated that subjective norms had a significantly higher predictive capability and higher variance for condom use intention among US students than among South African students. However, only one of the nine studies reviewed, indicated that subjective norms was significantly associated with the intention to engage in sex with multiple partners (Asare & Sharma, 2010).

Two of the nine studies that examined the relationship between subjective norms and RSB intention reported mixed results. In the first study, Cha, Kim, and Patrick (2008) reported that peer norms for condom use were weak predictors, but significantly correlated to condom use intention in males while peer norms for condom use were

weaker predictors but not significantly correlated to condom use intention in females. It is plausible that some females may not efficiently negotiate condom use due to gender roles. This may lead to decreased condom use intention in females (Mberu & White, 2011; Omorodion et al., 2007; Rosenthal et.al, 2003).

Findings from the second study conducted in a Mexico/US border city indicated that subjective norms was significantly correlated with condom use intention in the Spanish/English (bilingual) group but it was not significantly correlated in the English only speaking group (Lechuga & Wiebe, 2009). It is plausible that the bilingual group in this study more closely followed Hispanic RSB subjective norms, while US cultural norms may have influenced the English only speaking group.

Across all nine studies, the samples were multinational and included some non US-based Nigerians. However, none of the studies tested the relationship between subjective norms and RSB intention among US-based Nigerians. Therefore, the study tested the relationships between subjective norms, condom use intention and the intention to engage in sex with multiple partners (MSP) among US-based Nigerians.

In summary, the theorized relationship that subjective norms predict RSB intention was supported by the majority of the studies reviewed. Although Asare and Sharma (2010) explored the relationship between subjective norms, condom use intention, and multiple sexual partners' intention among US-based Africans-namely, Ghanaians, none of the nine studies examined this relationship among US-based Nigerians. The current study filled these knowledge gaps in the literature by testing these theorized relationships among US-based Nigerians.

Table 2.1

Summary of Studies that Examined Relationships between Subjective Norms and Intention

Authors/Year	Participants	Relevant Conclusions
Asare & Sharma (2010)	Correlational, cross-sectional study among 137, male and female Ghanaian immigrants in a large Midwestern US city. Age range (21-60), Mean (SD) = 39.51(7.95)	Subjective norms was a significant predictor for condom use intention (β =.06, t = 3.78, p =.001) and intention to engage in sex with multiple sexual partners (β =.24, t = 5.92, p =.001).
Cha, Kim, & Patrick (2008)	Cross-sectional, correlational study on 298 Korean College students aged 18-25. Mean (SD) 21.78 (2.17)	Peer norms for condom use were weak predictors, but significantly correlated to condom use intention in males: (r = .28, β =.14, p < .01), while peer norms for condom use were weaker but not significantly correlated to condom use intention in females: (r = .08, β =.11, p = ns).
Heeren, Jemmott, Mandeya, & Tyler (2007)	Correlational, cross-sectional study among 411male and female undergraduates from the US and South Africa. Mean age was 22.1 years	In step one of hierarchical multiple regression, subjective norms was a significant predictor for condom use intention (β =.50, p = .0001). In step two, subjective norms was also a significant predictor for condom use intention β =1.33, p = .0001). Subjective norms accounted for 6% of the variance for condom use intention. Subjective norms had a significantly higher predictive capability for condom use intention among US (β =.84, p = .0001) than among South African students (β =.32, p = .0001). Condom use intention accounted for higher variance among US (53%, p =.0001) than among South African students (35%, p =.0001).
Heeren, Jemmott, Mandeya, & Tyler (2009)	A three-month prospective study among 320 male and female South African undergraduates. Age range (18-43), Mean (23.4)	Sexual partner norms was a significant predictor for condom use intention (r =.55, β =.18, t = 6.64, p =.0001) and peer norms was a significant predictor for condom use intention (r =.52, β =.17, t = 5.15, p =.0001).
Lechuga & Wiebe (2009)	RCT on 182 male and female English-Spanish bilingual university students in a US-Mexico border city. Age-Mean (SD) 20.34 (4.05).	Subjective norms was statistically correlated with condom use intention in the Spanish treatment (r = -.45, p < .01), but not statistically correlated in the English treatment (r= -.07, p = ns) and Spanish only control (r = -.00, p = ns) groups.

Authors/Year	Participants	Relevant Conclusions
Liu et al. (2013)	Correlational, cross-sectional study among 122 money Boys from China. Age range (18 - > 30) Mean (SD) = 24 (5.3).	Condom use intention in the prior two months was significantly correlated with subjective norms (r = .32, β = .21, p =.01).
Peltzer & Oladimeji (2004)	Correlational, cross-sectional study among 435 male and female South African and Nigerian university students. Age range = [Mean (SD)] Nigeria:16-30 [21.6, (2.9)] South Africa: 21-50 [32.4 (8.4)].	Subjective norms was a significant predictor of condom use intention (β =.25, p < .0008).
Protogerou, Flisher, Wild, & Aarø (2013)	Prospective mixed methods study among 389, male and female South African university students. Age range (17-30). Mean (SD) =19.1 (1.8)	**(Baseline [T1])** Subjective norms was significantly correlated with condom use intention (r =.30, p <.001) **(One month [T2])** Subjective norms was still significantly correlated with condom use intention (r =.50, p <.001).
Wang (2013)	Descriptive correlational, cross-sectional study of 849 male and female Black, Caucasian and Hispanic undergraduates from a Northeastern US university. Ages: Mean (SD) Male: 20.39 (2.29) Female: 20.31 (1.71).	Subjective norms significantly predicted condom use intention for females who were not in a relationship or who were in other types of relationships (r =.72, β =.56, p =.001) than for females who were in a monogamous relationship of at least three months duration (r = .62, β = - β=. 36, p =.001). Subjective norms significantly predicted condom use intention for males (r=.76, β=.50, p =.001) if they had stronger perceptions of subjective norms.

The Relationship between Gender, Subjective Norms, and RSB Intention

In this section, a synthesis and analysis of empirical evidence supporting the theorized relationships between gender and the TPB constructs of subjective norms and the intention to engage in RSB are presented. The literature search, which was delimited to studies that examined the above variables, yielded six theory-based studies. The study design, sample characteristics, and relevant findings are summarized in Table 2.2.

Four out of the six studies reviewed showed that gender was a significant predictor of condom use intention (Cha et al., 2008; Mausbach et al., 2009; Munoz-Silva et al., 2009; Wang, 2013). In contrast, two of the six studies (Lechuga & Wiebe, 2009; Protogerou et al., 2013) did not show a relationship between gender and condom use

intention. In one of the six studies, the effects of gender changed over time because subjective norms was at first significantly correlated to condom use intention in males but not in females. However, three months after baseline data collection in this cross-sectional study, subjective norms was significantly correlated to condom use intention in females but not in males (Cha et al., 2008). This may have indicated that as females in that study became comfortable in a relationship and comprehended the negative consequences of RSB, their intention for condom use increased or they became more comfortable negotiating condom use. It was also plausible that as male participants got comfortable in a relationship they no longer appreciated the need to use condoms. Therefore, their intention for condom use declined.

In one of the six studies (Wang, 2013), subjective norms significantly predicted condom use intention for both genders in non-monogamous relationships. However, it was not a significant predictor of condom use intention within monogamous relationships. This finding may be due to the establishment of trust between married monogamous couples. This study may explain why married participants in the US-based Ghanaian study reported lower condom use intention (Asare & Sharman, 2010). None of the six studies examined the relationships among gender, subjective norms and the intention to engage in sex with multiple sexual partners. Across all six studies, subjective norms as a mediator of the relationship between gender and intention was not tested. In addition, none of the studies sampled US-based Nigerians. The current study explored these relationships among US-based Nigerians.

In summary, across the six studies, findings regarding the relationship between gender and the intention to engage in RSB were varied. Four of the six studies revealed

significant relationships between gender and intention (Cha et al., 2008; Mausbach et al., 2009; Munoz-Silva et al., 2009; Wang, 2013) , while two studies did not find statistical significance (Lechuga & Wiebe, 2009; Protogerou et al., 2013). In addition, none of the studies explored these relationships among US-based Nigerians. The study filled this gap in the literature by examining these relationships among US-based Nigerians.

Table 2.2

The Relationship between Gender, Subjective Norms, and RSB Intention

Authors/Year	Participants	Relevant Conclusions
Cha, Kim, & Patrick (2008)	Cross-sectional, correlational study on 298 Korean College students aged 18-25. Mean (SD) 21.78 (2.17)	Females ($r = .60$, $p = .039$) had a significant correlation with intention and were more likely than males who did not have a significant relationship with intention ($r = .25$, $p = .096$) to report higher condom use intention in the subsequent three months after baseline data collection.
Lechuga & Wiebe (2009)	RCT on 182 male and female English-Spanish bilingual university students in a US-Mexico border city. Age-Mean (SD) 20.34 (4.05).	Females scored a higher but not statistically significant score on acculturation and condom use intention than males ($t(175) = 1.88$, $p = .06$).
Mausbach, Semple, Strathdee, & Patterson (2009)	RCT among 228 multinational male and female HIV negative heterosexuals from neighborhoods with high methamphetamine users. Age range = 18-63. Mean (SD) = 36.4 (10.0)	Male gender was a significant predictor of greater intention for safer sex ($t = 2.79$, $p = .006$).
Munoz-Silva, Sanchez-Garcia, Martins, & Nunes (2009)	Descriptive correlational, cross-sectional study of 683 university students from Spain (mean age (SD) 20.94 (3.5) and Portugal (mean age (SD) 22.34 (4.2)	Portuguese males ($\beta = .24$, $p < .01$) had greater intention for condom use than females ($\beta = .15$, $p < .05$), while Spanish females ($\beta = .24$, $p < .01$) had greater intention for condom use than males ($\beta = .20$, $p < .01$).
Protogerou, Flisher, Wild, & Aarø (2013)	Prospective mixed methods study among 389, male and female South African university students. Age range (17-30). Mean (SD) =19.1 (1.8)	Gender was not significantly correlated to subjective norms ($r = .00$, $\beta = .15$, $p =$ ns) and condom use intention ($r = -.18$, $\beta = .15$, $p =$ ns).
Wang (2013)	Descriptive correlational, cross-sectional study of 849 male and female Black, Caucasian and Hispanic undergraduates from a Northeastern US university.	Gender was correlated to condom use intention and subjective norms. Subjective norms significantly predicted condom use intention for females who were not in a relationship or who were in

Authors/Year	Participants	Relevant Conclusions
	Ages: Mean (SD) Male: 20.39 (2.29) Female: 20.31 (1.71).	other types of relationships (r =.72, β =.56, p =.001) than for females who were in a monogamous relationship of at least three months duration (r = .62, β = -.20, p < .05). Subjective norms significantly predicted condom use intention for males (r =.76, β =.50, p =.001). However, it was not a significant predictor of condom use intention for males who were in a monogamous relationships of at least three months duration (β = -.03, p = ns).

The Relationships between Acculturation, Subjective Norms and RSB Intention

In this section, a synthesis and analysis of empirical literature supporting the theorized relationships between acculturation and the TPB constructs of subjective norms and intention to engage in RSB among US-based Nigerians is presented. There was a dearth of studies that explored these relationships. Lechuga and Wiebe (2009) was the only study identified that measured condom use intention. Subsequently, other studies that examined actual reports of behavior were also reviewed. It was logical to assume intention across studies that measure actual RSB because intention is the immediate theoretical antecedent to behavior (Ajzen, 1985, 2012). The literature search that included studies examining actual RSB yielded seven theory-based studies. For each study, the study design, sample characteristics, and relevant findings are summarized in Table 2.3.

Five of the seven studies indicate that higher levels of acculturation to the US culture was significant for increased engagement in sex with multiple sexual partners and for reduced condom use intention than in those who were less acculturated to US culture (Hennessy-Burt et al., 2011; Hines et al., 1998; Lechuga & Wiebe, 2009; Rojas-Gujler et al., 2005; Thurman et al., 2009). It was plausible that adherence to individual ethnic cultural values in those who were less acculturated to US culture resulted in participants

who engaged in lower levels of RSB. These were paradoxical findings because it is logical to expect that participants who were more highly acculturated to the US culture should have lower RSB intention and decreased incidences of actual RSB. Findings from a study suggested that the US culture was not significantly associated with engagement in RSB among White and Black participants (Schwartz et al., 2011). Therefore, studies such as this current study about US-based Nigerians are needed to further explore possible relationships between acculturation and RSB intention. In contrast to above studies, one of the seven studies (Robinson et al., 2005) indicated that acculturation was not a predictor for multiple sexual partners and condom use.

Findings from another study indicated that acculturation was significantly associated with engagement in RSB among immigrant US-based Hispanics and Asians, but not among US-based White and Black participants (Schwartz et al., 2011). This may indicate that since US-based Whites and Blacks grew up within the US culture, acculturation as experienced by immigrant Hispanics and Asians may not be applicable to them. Lastly, in another study Hines et al. (1998) examined acculturation and RSB in the context of drinking. They found that engagement in sexual activities with multiple sexual partners was significant in highly acculturated African American women who drank alcohol when compared to highly acculturated African American women who did not drink alcohol. This finding was not surprising since alcohol lowers sexual inhibition. This is important to the proposed study because the sampled African American women were not delineated by country of origin. Therefore, African-born women may have been included in the sample as part of a monolithic group. This current study presented

findings about US-based Nigerians as a separate cultural group apart from a monolithic black group.

There were no methodological flaws across all seven studies. However, although, the samples in these studies were comprised of African Americans or Blacks (Hines et al., 1998; Robinson et al., 2005; Rojas-Guyler et al., 2005; Schwartz et al., 2011; Thurman et al., 2009), US-based Nigerians were not included among study participants. This study filled this gap by examining the relationship between acculturation and TPB constructs among US-based Nigerians.

In summary, there was the unexpected finding that highly acculturated participants were more likely to have multiple sexual partners when compared to lower acculturated participants in the studies reviewed. Although the outcomes differed across the studies (i.e., condom use intention or actual condom use), engaging in sex with multiple sexual partners was significant in the context of acculturation across all seven studies. The extent to which US-based Nigerian's level of acculturation and subjective norms influences their intention to engage in RSB was unknown. The current study explored these relationships among US-based Nigerians.

Table 2.3

The Relationships between Acculturation, Subjective Norms and RSB Intention

Authors/Year	Participants	Relevant Conclusions
Hennessy-Burt, Stoecklin-Marois, Meneses-Gonzalez, & Schenker (2011)	Cross-sectional, correlational study of 195 Hispanic women from Mexico and California aged 18-49. Mean = 32 years.	Medium to highly acculturated US-based Hispanic women were statistically significantly, 3.8 times (OR=3.8, 95% CI =1.0, 15.0) as likely to have multiple sexual partners than low acculturated US-based Hispanic women (OR=1.0, 95% CI = ?) and Mexican residents (OR=0.3, 95% CI =0.1, 1.0)
Hines, Snowden, & Graves (1998)	Cross-sectional, correlational study of 470 African American women. A sub-sample of a	No statistically significant correlation between acculturation and risky sexual behavior (condom use and multiple sexual

Authors/Year	Participants	Relevant Conclusions
	national US alcohol survey aged 18-29.	partners). When acculturation was combined with drinking, there was still no statistically significant relationship with condom use for low acculturated women who drank moderately (OR =.11, 95% CI =0.00, 3.36) or for highly acculturated women who drank heavily (OR=.26, 95% CI =.00, 7.82) There was also no statistically significant relationship with multiple sexual partners for low acculturated women who drank moderately (OR= 12.60, 95% CI =.93, 17.0). There was a statistically significant relationship for highly acculturated women who drank heavily because they were 13 times more likely (OR= 13.09, 95% CI = 1.02, 67.2) to have multiple sexual partners when compared to women who were low in acculturation and did not drink.
Lechuga & Wiebe (2009)	RCT on 182 male and female English-Spanish bilingual university students in a US-Mexico border city. Age-Mean (SD) 20.34 (4.05).	Acculturation was statistically correlated with condom use intention in the Spanish treatment ($r = -.45$, $p < .01$), but not statistically correlated in the English treatment ($r = -.07$, p = ns) and Spanish only control ($r = -.00$, p = ns) groups.
Robinson, Scheltema, & Cherry (2005)	RCT for 163 African American women from Minneapolis and St. Paul, Minnesota. Age ranged from 15-62 with Mean (SD) 32.2 (8.96).	Acculturation was not a statistically predictor of multiple concurrent sexual partners (OR= 1.43, [95% CI = .47, 4.37], p = ns), condom use (OR= .87, [95% CI = .25, 3.09], p = ns) and high-risk sexual behavior (OR= .97, [95% CI = .42, 2.21], p = ns).
Rojas-Guyler, Ellis, & Sanders (2005)	Cross-sectional, correlational study of 295 women from a Midwestern US Hispanic pediatric health center aged 18-60.	There was a statistically negative correlation between Hispanic acculturation and number of sexual partners ($r = -.152$, $p = .009$). Those who adhered greatly to Hispanic culture reported lower numbers of sexual partners in the prior 12 months of the study.
Schwartz et al. (2011)	Cross-sectional, correlational study of 3,251 male and female, immigrant White, Black, Hispanic and Asian undergraduate students from 30 universities across the US. Ages, 18-29. Mean (SD) 20.22 (3.31)	Cultural identity was statistically significant and positively related to sexual risk taking for immigrant Hispanics (IRR= 1.06, [95% CI = 1.01, 1.12], $p < .02$), while US cultural practices (IRR= 1.19, [95% CI = 1.05, 1.34], $p < .01$) were statistically significant and positively related to sexual risk taking for immigrant East Asians. Neither of both acculturation dimensions was statistically significant for White and Black participants.
Thurman, Holden, Shain, Perdue, & Piper (2009).	Cross-sectional, intake survey of 506 Mexican American and African American women who	In the presence of Microbicides: Mean (SD) score for having sex with multiple sexual partners was statistically significantly higher

Authors/Year	Participants	Relevant Conclusions
	were in a RCT sexual awareness program in Texas. Aged 14-45 years old.	among 53% of acculturated Hispanics = 1.14 (1.46), $p < .001$ than 33% of less acculturated Hispanics = 0.67 (1.11), $p < .02$ and 30% of African Americans = .51 (0.81) $p < .01$. Condom non-use was statistically significantly higher among 18% of acculturated Hispanics = 1.14 (1.46), $p <$. 001 than 8% of less acculturated Hispanics = 0.67 (1.11), $p < .02$ and 6% of African Americans = .51 (0.81) $p < .01$.

The Mediating Role of Subjective Norms

In this section, there was a shortage of published literature that examined the mediating role of subjective norms in relation to RSB. The literature search yielded only four theory-based studies that examined subjective norms as a mediator. Due to this limitation, a synthesis and analysis of the empirical literature supporting the theorized mediating role of subjective norms between gender, acculturation, and non-RSB outcomes are presented. This supported the assumption that if subjective norms can mediate other variables, it is plausible that it may also mediate between gender, acculturation and RSB. For each study, the study design, sample characteristics, and relevant findings are summarized in Table 2.4.

Across all four studies (Ajzen & Klobas, 2013; Caperchione & Mummery, 2007; Hillhouse, Turrisi, Stapleton, & Robinson, 2008; Zemore, 2005), diverse background factors of age, group cohesion, appearance-focused approaches to skin cancer prevention, and gender were examined. In three of the four studies, Ajzen and Klobas (2013) explore age, attitude to childlessness, education, housing condition, income, nationality, parity, and religiosity as background factors to infertility. Hillhouse et al. (2008) examined age, family socioeconomic status, skin type, and year in school as background factors for

indoor tanning. Lastly, attitude toward intermarriage, depressive symptoms, ethnic environment, gender, and language preference were the background factors considered by Zemore (2005) in relation to drinking outcomes. The background factors from above studies directly correlated with intention and were mediated by subjective norms. However, in one study, although, subjective norms predicted intention, it did not mediate the relationship between group cohesion as a background factor and intention (Caperchione & Mummery, 2007).

There is empirical evidence that subjective norms mediated the relationship between background factors and behavioral intention. Therefore, it is plausible that subjective norms may mediate the relationship between gender and RSB intention and between acculturation and RSB intention among US-based Nigerians. The current study filled this gap by focusing on the mediating role of subjective norms in relation to condom use and multiple sexual partners (MSP) intention in the context of acculturation and gender as background factors among US-based Nigerians.

Table 2.4

The Mediating Role of Subjective Norms

Authors/Year	**Participants**	**Relevant Conclusions**
Ajzen & Klobas (2013)	Retrospective study among 265 Childless women in France. Age: < 40 years. Mean (SD) =26.1 (4.6)	In the first mediation model, age (β =. 20, p <.001) had a standardized effect on intention to have a child within the subsequent three years. In the second model, when subjective norms was added to the model, the effect of age (β =. 10, p = ns) was no longer statistically significant on intention to have a child because it was fully mediated by subjective norms (β =. 38, p <.001) surrounding child bearing.
Caperchione & Mummery (2007)	RCT study among 74 male and female older adults enrolled in a physical activity study in Central Queensland Australia. Mean age	In step one of the regression model, subjective norms (r=.43, β =.11, p =.001) predicted intention for physical activity. However, in step two subjective norms (r

Authors/Year	Participants	Relevant Conclusions
	(SD) =58.36 (8.0)	=.43, β =.04, p =.001) did not mediate the relationship between group cohesion and physical activity intention.
Hillhouse, Turrisi, Stapleton, & Robinson (2008)	RCT among 412 female students. Age range (17-21). Mean (SD) =18.6 (.78)	Intervention for this study was a 24-page booklet about appearance-focused approaches to skin cancer prevention. Subjective norms mediated between utilizing alternative appearance enhancing recommendation from the book let versus the intention for indoor tanning. The MacKinnon et al mediation model at one month (baseline intervention) indicated that intervention (mean score (SE) = 9.7 (1.04) reduced subjective norms (β = -5.51, p <.001) about intention to use indoor tanning when compared to the intention of not using indoor tanning. At six months (follow-up), subjective norms (β = .17, p <.001) led to significant increases in the intention to use indoor tanning when compared to the intention of not using indoor tanning (mean score (SE) =5.7 (1.13). Combined mediation strength for both models (β = .92, p <.001)
Zemore (2005)	Retrospective study of male and female 1586 Latinos. Age: Mean (SD) = 39 (15).	Higher acculturation predicted positive gender-specific drinking norms (β = 0.37, p < .001). **Model 1:** Acculturation (OR = 1.07, CI = 1.04, 1.10, p < .001) had significant effects on: (a) Average volume drank (β = 0.16, p < .05) and (b) Frequency of drunkenness (β = 0.23, p < .001). **Model 2:** Gender-specific drinking norms added to the model while drinking outcomes were regressed against acculturation, resulted in a mixed mediational result: **(a)** Acculturation (OR = 1.05, CI = 1.01, 1.08, p < .01) no longer had a significant effect on average volume drank (β = 0.08, p = ns). Therefore, gender-specific drinking norms was a mediator between acculturation and average volume drank. **(b)** However, acculturation had a lower but still significant effect on frequency of drunkenness (β = 0.16, p < .05). Therefore, gender-specific drinking norms were not a mediator between acculturation and frequency of drunkenness. Increased positive gender-specific drinking

Authors/Year	Participants	Relevant Conclusions
		norms predicted: (a) increased probability of drinking (OR = 8.24, CI = 5.77, 11.76, $p < .001$), (b) increased average volumes of drinking ($\beta = 0.24$, $p < .001$), and (c) increased frequency of drunkenness among drinkers ($\beta = 0.26$, $p < .001$).

Summary of the Literature Review / Current State of Knowledge and Gaps

Across studies (Asare & Sharma, 2010; Cha et al., 2008; Heeren et al., 2007, 2009; Lechuga & Wiebe, 2009; Liu et al., 2013; Peltzer & Oladimeji, 2004; Protogerou et al., 2013; Wang, 2013), the literature supported Ajzen's (1985, 2012) proposition that subjective norms about RSB are antecedents to RSB behavioral intention. However, there was a scarcity of studies examining the predictive power of subjective norms in relation to the intention of engaging in sex with multiple sexual partners. Although the majority of the literature explored the association between subjective norms and condom use intention, none of the studies explored the relationship between subjective norms and RSB intention among US-based Nigerians.

A majority of reviewed articles indicated that gender is a significant predictor of RSB intention (Cha et al., 2008; Mausbach et al., 2009; Munoz-Silva et al., 2009; Wang, 2013). However, there was no consensus regarding which gender had a higher predictive capability for condom use intention (Lechuga & Wiebe, 2009; Protogerou et al., 2013). In addition, there was a lack of studies examining the operant mechanism for the relationships between gender and the intention to engage in sex with multiple sexual partners. None of the studies explored the relationship between gender, subjective norms and RSB among US-based Nigerians.

The literature review indicated that it is plausible that a higher level of acculturation to a more urbanized US culture when compared to immigrating from a lower urbanized non-US culture was significantly related to US-based immigrants engaging in RSB (Hennessy-Burt et al., 2011; Hines et al., 1998; Lechuga & Wiebe, 2009; Rojas-Gujler et al., 2005; Thurman et al., 2009). There was a dearth of studies examining the relationships among acculturation, subjective norms and RSB intention and none of the studies examined these relationships among US-based Nigerians. The proposed study will examine if these findings will also be reported for US-based Nigerians.

In conclusion, prior to this current study, US-based Nigerians had not been studied as a group in research studies that examined TPB constructs and background variables. An exploration and understanding of RSB within this population was indicated. To fill this gap in the literature, the purpose of this study was to explore the relationships among subjective norms, gender, acculturation and intention for condom use and multiple sexual partners among US-based Nigerians.

Theoretical Rationale

The Theory of Planned Behavior (Ajzen, 1985, 2012) proposes that RSB is directly determined by the intention to engage in RSB and that RSB intention is determined by RSB subjective norms. Ajzen (2012) also explicated that subjective norms may also serve as a mediator in the relationship between background factors and the intention to engage in RSB. Specifically, it is plausible that personal characteristics, such as an individual's level of acculturation and gender, may influence one's intention to engage in RSB through their effects on subjective norms.

Hypotheses

The following hypotheses were examined among US-based Nigerians who were at least 18 years old.

1. Risky sexual behavior subjective norms are significantly related to lack of condom use intention.
2. Risky sexual behavior subjective norms are significantly related to multiple sexual partners intention.
3. Gender is significantly related to lack of condom use intention.
4. Gender is significantly related to multiple sexual partners intention.
5. Acculturation is significantly related to lack of condom use intention.
6. Acculturation is significantly related to multiple sexual partners intention.
7. Gender is significantly related to subjective norms
8. Acculturation is significantly related to subjective norms.
9. When attitudes and perceived behavioral control about condom use and multiple sexual partners are controlled for, gender, level of acculturation, and subjective norms are independently related to condom use intention.
10. When attitudes and perceived behavioral control about condom use and multiple sexual partners are controlled for, gender, level of acculturation, and subjective norms are independently related to multiple sexual partners intention.
11. When subjective norms about RSB is controlled for, the magnitude and significance of the relationship between gender and condom use intention will diminish.

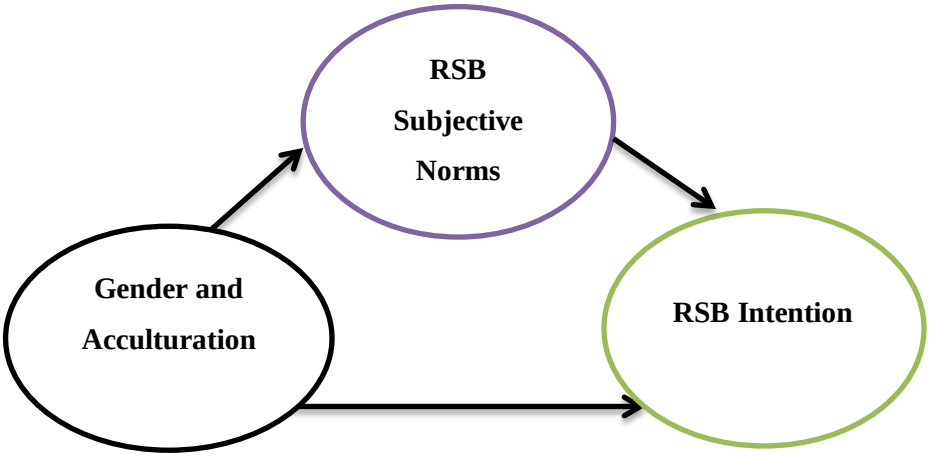
12. When subjective norms about RSB is controlled for, the magnitude and significance of the relationship between gender and multiple sexual partners intention will diminish.

13. When subjective norms about RSB is controlled for, the magnitude and significance of the relationship between acculturation and condom use intention will diminish.

14. When subjective norms about RSB is controlled for, the magnitude and significance of the relationship between acculturation and multiple sexual partners intention will diminish.

Figure 2.

The Theoretical Relationships between Subjective Norms, Gender, Acculturation, and Intention that were tested In the Study



Theoretical and Operational Definitions

Intention

Intention is theoretically defined as the indication of an individual's inclination to engage or not engage in RSB (Ajzen, 1985, 2012). Condom use and multiple

sexual partners (MSP) intention were examined in this study.

Condom Use Intention

Condom use intention was theoretically defined in this study as the intention to use a condom anytime the participant engaged in sexual intercourse, where sexual intercourse was defined as vaginal and/or anal penetration by a penis with a female or male partner. Condom use intention was operationally defined as the participant's score on the Health and Safer Sex Behavior Survey intention scale (Asare & Sharma, 2010).

Multiple Sexual Partners Intention

Multiple sexual partners (MSP) intention was theoretically defined in this study as the intention to have sex with more than one partner in the subsequent three months prior to the study. MSP intention was operationally defined as the participant's score on the Health and Safer Sex Behavior Survey intention about MSP scale (Asare & Sharma, 2010).

Subjective Norms

Subjective norms was theoretically defined as the participants' perceived social pressure from those who are important in their lives (important referents) and whose opinions may influence their decision to engage or not to engage in RSB (Ajzen, 1985, 2012). Subjective norms about condom use and multiple sexual partners were examined in this study.

Subjective Norms about Condom Use Intention

Subjective norms about condom use intention was theoretically defined in this study as the motivation to comply with subjective norms about condom usage. Subjective norms about condom use intention was operationally defined as the participant's

combined score on the Health and Safer Sex Behavior Survey for condom use subjective norms and motivation to comply scales (Asare & Sharma, 2010).

Subjective Norms about Multiple Sexual Partners Intention

Subjective norms about multiple sexual partners (MSP) was theoretically defined in this study as the motivation to comply with subjective norms about engaging in sex with MSP. Subjective norms about MSP was operationally defined as the participant's combined score on the Health and Safer Sex Behavior Survey for MSP subjective norms and motivation to comply scales (Asare & Sharma, 2010).

Acculturation

Acculturation was theoretically defined as the "process by which immigrant ethnic groups are exposed to, and gradually adopt the ways of the dominant culture" (Tong, 2013, p. 561) through the dynamic strategies of integration, assimilation, separation and marginalization (Berry et al., 2012). In this study, acculturation was defined as "those phenomena which result when groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original cultural patterns of either or both groups" (Obasi & Leong, 2010; Redfield, Linton, & Herskovits, 1936, P. 149). Acculturation was operationally defined as the participant's score on the Measurement of Acculturation Strategies for People of African Descent (MASPAD), a bi-dimensional (traditionalist and assimilationist) Acculturation Scale (Abdullah, 2013; Abdullah & Brown, 2012; Obasi & Leong, 2009; 2010).

Gender

Gender was defined as individuals who self-identified as male or female on the demographic data sheet.

US-Based Nigerian

A US-Based Nigerian was any individual who was at least 18 years of age and who self-identified as a Nigerian residing in the US on the demographic data sheet.

Chapter 3

Methods

This chapter describes the research design and methods for this study. The research setting, sample, sampling method, instruments, inclusion criteria, data collection procedures, data analysis, and human subject's protection will be described in detail. The study utilized a descriptive cross-sectional, correlational design to investigate the relationships among subjective norms, gender, acculturation and the intention to engage in risky sexual behaviors (RSB) namely, lack of, or inadequate condom use and engagement in sex with multiple sexual partners (MSP) among US-based Nigerians.

Research Setting

Participants were recruited electronically via existing email Listservs that were comprised of US-based Nigerian members from five Nigerian communities across the US. Permissions for recruiting Listserv members were obtained from the following community leaders: (a) President, Nigerian Association in the Triad (Appendix A), (b) President, Nigerian Community in Chicago Land (Appendix B), (c) Director of Social and Publicity Secretary, Nigeria Cultural Association (Appendix C), (d) Chairman, Nigerian Independence Day Parade Committee (Appendix D), and (e) Secretary, Oduduwa Unity Club (Appendix E). These listservs had a combined membership of over 2,000 US-based Nigerians. Thus, a recruitment pool of at least 2, 000 potential US-based Nigerian participants was anticipated. As of 2009, there were over 209,908 Nigerians

living in the US. Therefore, using a web-based design to capture a national sample of US-based Nigerians was suitable for the study (McCabe, 2011).

Sampling Method

Utilizing convenience sampling, all individuals from the five US-based Nigerian community Listservs, who met inclusion criteria were recruited for the study. Qualified participants (a) were self-identified US-based Nigerians, (b) understood, spoke and wrote English, and (c) were at least 18 years old. Individuals who were not US-based Nigerians, were under 18 years old, and did not understood, spoke and wrote English were excluded from the study.

Sample Size

Statistical power analysis for correlational and regression analyses were calculated to determine the appropriate sample size to yield sufficient power for these statistical techniques. For correlational analysis, a moderate anticipated effect size (r =.30) was estimated based on previous research (Ajzen & Klobas, 2013; Asare & Sharma, 2010; Cha et al., 2008; Liu et al., 2013; Protogerou et al., 2013). Thus, a sample size of 85 subjects was required to obtain statistical power of 0.80 at a .05 significance level (Cohen, 1988). For regression analysis, a moderate anticipated effect size (f^2= .15) was estimated based on a review of previous studies (Asare & Sharma, 2010; Caperchione & Mummery, 2007; Heeren et al., 2007; Heeren et al., 2009; Munoz-Silva et al., 2009; Peltzer & Oladimeji, 2004). Based on eight predictor variables, a minimum sample size of 108 was required to obtain a power of .80 at a significance level of .05 (Cohen, 1988).

Instruments

Health and Safer Sex Behavior Survey (HSSBS)

The Health and Safer Sex Behavior Survey (HSSBS) (Appendix F) developed by Asare and Sharma (2010) was utilized to measure (a) condom use intention, (b) multiple sexual partners' intention, (c) subjective norms about condom use, (d) subjective norms about multiple sexual partners, and the two covariates (attitudes about condom use and multiple sexual partners; perceived behavioral control over condom use and multiple sexual partners). The HSSBS was developed using the Theory of Planned Behavior (TPB) constructs (Ajzen, 1985, 2012). The HSSBS is an eight dimensional, 55-item self-administered and self-reported survey developed to measure risky sexual behaviors (RSB) in the prior three months before the study among US-based Africans, specifically US-based Ghanaians.

The following HSSBS scales were used in this study: the (a) 3-item Condom Use Intention Scale, (b) 3-item Multiple Sexual Partners Intention Scale, (c) 6-item Attitudes toward Condom Use Scale, (d) 6-item Attitudes toward Multiple Sexual Partners Scale, (e) 6-item Subjective Norms about Condom Use Scale, (f) 6-item Subjective Norms about Multiple Sexual Partners Scale, (g) 6-item Perceived Behavioral Control (PBC) over Condom Use Scale, and (h) 6-item PBC over Multiple Sexual Partners Scale (Asare & Sharma, 2010).

Psychometric properties of the HSSBS were established in a sample of 137 male and female US-based Ghanaians in a large Midwestern US city. The mean age of persons in that sample was 39.51 years (SD = 7.95) with a range of 21-60 years. Face and content validity for the HSSBS was established twice by a panel of four experts. Items were generated from a review of the literature, review of related questionnaires, and interviews with the target population. Two experts were instrumentation and theory experts while

the other two were instrumentation and target population experts. Participants are asked to respond to all TPB questions on a 7-point Likert-type visual analog rating scale using adjective pairs that are consistent with Ajzen's (1985, 2012) tool development recommendations. One-week test-retest reliability for all dimensions of the HSSBS was established in 30 participants from the target population. Test-retest reliability, internal consistency, and construct validity results for condom use and multiple sexual partners' intentions are discussed below.

Intention about Condom Use

The three items on the Condom Use Intention Scale were measured using a seven-point Likert-type scale from (1) extremely unlikely to (7) extremely likely, (1) definitely false to (7) definitely true, and (1) strongly disagree to (7) strongly agree. A sample question was "I intend to use a condom every time I engage in sexual intercourse." Total scores range from 3-21. Internal consistency reliability ($\alpha = .91$) for this scale was acceptable (Nunnally & Bernstein, 1994) and established in US-based Africans (Asare & Sharma, 2010). One-week test-retest reliability correlation coefficient ($r = .97$) indicated acceptable (Nunnally & Bernstein, 1994) stability over time. Confirmatory factor analysis for construct validity confirmed a single factor that accounted for 78.32% of the variance. This scale was easy to score and interpret because higher scores indicated higher intention to use condoms (Asare & Sharma, 2010; Nunnally & Bernstein, 1994; Waltz et al., 2010).

Intention about Multiple Sexual Partners

Intention about multiple sexual partners (MSP) was measured with three items that were rated on a seven-point Likert-type scale from (1) extremely unlikely to (7)

extremely likely; (1) definitely false to (7) definitely true; and (1) strongly disagree to (7) strongly agree. A sample question was "I intend to have sex with more than one partner in the next three months at different times." Total scores range from 3-21. Internal consistency reliability ($\alpha = .85$) for this scale is acceptable (Nunnally & Bernstein, 1994) and established in US-based Africans (Asare & Sharma, 2010). One-week test-retest reliability correlation coefficient ($r = .80$) (Asare & Sharma, 2010) indicated acceptable stability over time. Confirmatory factor analysis for construct validity confirmed a single factor that accounted for 35.8 % of the variance. This scale was easy to score and interpret because higher scores indicated higher intention to have sex with multiple sexual partners (Asare & Sharma, 2010; Nunnally & Bernstein, 1994; Waltz et al., 2010).

Attitudes toward Condom Use

The Attitudes toward Condom Use Scale was divided into two subscales namely, Behavioral Beliefs, and Outcome Evaluation about Condom Usage. The three items on the Behavioral Beliefs subscale were measured on a seven-point Likert-type scale from (1) strongly disagree to (7) strongly agree. A sample question was "If i use a condom every time I engage in sexual intercourse, I will feel safe from contracting sexually transmitted diseases (STD)." The three items on the Outcome Evaluation subscale were measured on a seven-point Likert-type scale from (-3) extremely unimportant to (+3) extremely important. A sample question was "During sexual intercourse the use of a condom to prevent sexually transmitted diseases (STD) is … to me." The score for each behavioral belief item was multiplied by the relevant outcome evaluation score to produce an overall attitude score. Total scores ranged from -63 to +63. This scale was easy to score and interpret because higher positive scores indicated higher and more

favorable attitudes toward condom use (Asare & Sharma, 2010; Waltz et al., 2010).

Cronbach's alphas for the Behavioral Beliefs (.88) and for the Outcome Evaluation (.92) subscales were established in US-based Africans (Asare & Sharma, 2010). They indicated acceptable (Nunnally & Bernstein, 1994) internal consistency reliability. Both sub-scales had acceptable (Nunnally & Bernstein, 1994) one-week test-retest reliability co-efficients (r = .97) indicated acceptable stability over time (Asare & Sharma, 2010; Waltz et al., 2010). Confirmatory factor analysis for construct validity of the Behavioral Beliefs subscale confirmed a single factor that accounted for 70% of the variance (Asare & Sharma, 2010; Nunnally & Bernstein, 1994; Waltz et al., 2010). Similarly, confirmatory factor analysis for construct validity of the Outcome Evaluation subscale confirmed a single factor that accounted for 79% of the variance (Asare & Sharma, 2010; Nunnally & Bernstein, 1994; Waltz et al., 2010).

Attitudes toward Multiple Sexual Partners

The Attitude toward Multiple Sexual Partners (MSP) Scale was divided into two sub-scales, namely, Behavioral Beliefs, and Outcome Evaluation about Multiple Sexual Partners. The three items on the Behavioral Beliefs subscale were measured on a seven-point Likert-type scale from (1) strongly disagree to (7) strongly agree. A sample question was "If I engage in sexual intercourse with multiple partners (more than one sexual partner), I am more likely to have unwanted pregnancies." The three items on the Outcome Evaluation subscale were measured on a seven-point Likert-type scale from (-3) extremely unimportant to (+3) extremely important. A sample question was "Having sexual intercourse with a single partner to prevent unwanted pregnancies is … to me." The score for each behavioral belief item was multiplied by the relevant outcome

evaluation score to produce an overall attitude score. Total scores ranged from -63 to +63. This scale was easy to score and interpret because higher positive scores indicated higher and more favorable attitudes toward having multiple sexual partners.

Cronbach's alphas for the Behavioral Beliefs (.97) and for the Outcome Evaluation (.86) subscales were established in US-based Africans (Asare & Sharma, 2010) and they indicated acceptable (Nunnally & Bernstein, 1994) internal consistency reliability. Both sub-scales had acceptable (Nunnally & Bernstein, 1994) one-week test-retest reliability coefficients (r = 1.00) (Asare & Sharma, 2010) indicated acceptable stability over time (Waltz et al., 2010). Confirmatory factor analysis for construct validity of the Behavioral Beliefs subscale confirmed a single factor that accounted for 92% of the variance (Asare & Sharma, 2010; Nunnally & Bernstein, 1994; Waltz et al., 2010). Similarly, confirmatory factor analysis for construct validity of the Outcome Evaluation subscale confirmed a single factor that accounted for 71% of the variance (Asare & Sharma, 2010; Nunnally & Bernstein, 1994; Waltz et al., 2010).

Subjective Norms about Condom Use

The Subjective Norms about Condom Use Scale was divided into two subscales, namely, Normative Beliefs, and Motivation to Comply. The three items on the Normative Beliefs subscale were measured on a seven-point Likert-type scale ranging from (1) strongly disagree to (7) strongly agree. A sample item was "My partner encourages me to use a condom whenever we have sexual intercourse." The three items on the Motivation to Comply subscale were measured on a seven-point Likert-type scale from (-3) not at all important to (+3) very much important. A sample question was "It is important that my sexual partner(s) approve of my condom use." The score for each normative belief item

was multiplied by the relevant motivation to comply score to produce an overall subjective norm score. Total scores ranged from -63 to +63. This scale was easy to score and interpret because higher positive scores indicated a higher and more favorable inclination to comply with condom use subjective norms (Asare & Sharma, 2010; Waltz et al., 2010).

Cronbach's alphas for the Normative Beliefs (.83) and for the Motivation to Comply (.87) subscales were established in US-based Africans (Asare & Sharma, 2010) and indicated acceptable (Nunnally & Bernstein, 1994) internal consistency reliability. In addition, both subscales had acceptable (Nunnally & Bernstein, 1994) one-week test-retest reliability co-efficients (r = .97) (Asare & Sharma, 2010) and indicated acceptable stability over time (Waltz et al., 2010). Confirmatory factor analysis for construct validation of the Normative Beliefs subscale confirmed a single factor that accounted for 69% of the variance (Asare & Sharma, 2010; Nunnally & Bernstein, 1994; Waltz et al., 2010). Similarly, confirmatory factor analysis for construct validity of the Motivation to Comply subscale confirmed a single factor that accounted for 73% of the variance (Asare & Sharma, 2010; Nunnally & Bernstein, 1994; Waltz et al., 2010).

Subjective Norms about Multiple Sexual Partners

The Subjective Norms about Multiple Sexual Partners (MSP) Scale was divided into two subscales namely, Normative Beliefs and Motivation to Comply. The three items on the Normative Beliefs subscale were measured on a seven-point Likert-type scale from (1) strongly disagrees to (7) strongly agree. A sample question was "My family encourages me to have sexual intercourse with multiple partners (more than one partner)." The 3-item Motivation to Comply subscale is measured on a seven-point

Likert-type scale from (-3) not at all important to (+3) very much important. A sample question was “How important is family’s approval of having sex with multiple partners to you?” The score for each normative belief item is multiplied by the relevant motivation to comply score to produce an overall subjective norms score. Total score ranged from -63 to +63. This scale was easy to score and interpret because higher positive scores indicated a higher and more favorable inclination to comply with subjective norms for engaging in sexual activities with multiple sexual partners (Asare & Sharma, 2010; Waltz et al., 2010).

Cronbach’s alphas for the Normative Beliefs (.82) and for the Motivation to Comply (.76) subscales were established in US-based Africans (Asare & Sharma, 2010) and indicated acceptable (Nunnally & Bernstein, 1994) internal consistency reliability. In addition, both subscales had acceptable (Nunnally & Bernstein, 1994) one-week test-retest reliability co-efficients (r = .70) (Asare & Sharma, 2010) which indicated stability over time. Confirmatory factor analysis for construct validation of the Normative Beliefs subscale confirmed a single factor that accounted for 79% of the variance (Asare & Sharma, 2010; Nunnally & Bernstein, 1994; Waltz et al., 2010). Similarly, confirmatory factor analysis for construct validity of the Motivation to Comply subscale confirmed a single factor that accounted for 56% of the variance (Asare & Sharma, 2010; Nunnally & Bernstein, 1994; Waltz et al., 2010).

Perceived Behavioral Control about Condom Use

Perceived Behavioral Control (PBC) about Condom Use Scale was divided into two subscales namely, Control Beliefs and Influence on Control Beliefs. The three items on the Control Beliefs subscale were measured on a seven-point Likert-type scale from

(1) strongly disagrees to (7) strongly agrees. A sample question was “I am confident that I can use a condom during sexual intercourse.” The 3-item Influence on Control Beliefs subscale was measured on a seven-point Likert-type scale from (-3) less likely to (+3) more likely. A sample question was “If I am confident that I can use a condom during sexual intercourse, I will ... use it.” The score for each control belief item was multiplied by the relevant influence on control belief score to produce an overall PBC score. Total scores range from -63 to +63. This scale is easy to score and interpret because higher positive scores indicated higher and more favorable PBC about condom usage (Asare & Sharma, 2010; Waltz et al., 2010).

Acceptable internal consistency reliabilities (Nunnally & Bernstein, 1994) for the Control Beliefs (.39) and Influence on Control Beliefs (.71) were established in US-based Africans (Asare & Sharma, 2010). In addition, both subscales had acceptable (Nunnally & Bernstein, 1994) one-week test-retest reliability co-efficients (r = .99) (Asare & Sharma, 2010) which indicated acceptable stability over time (Nunnally & Bernstein, 1994). Confirmatory factor analysis for construct validity of the Control Beliefs subscale confirmed a single factor that accounted for 37% of the variance (Asare & Sharma, 2010; Nunnally & Bernstein, 1994; Waltz et al., 2010). Similarly, confirmatory factor analysis for construct validity of the Influence on Control Beliefs subscale confirmed a single factor that accounted for 60% of the variance (Asare & Sharma, 2010; Nunnally & Bernstein, 1994; Waltz et al., 2010).

Perceived Behavioral Control about Multiple Sexual Partners

Perceived Behavioral Control (PBC) about Multiple Sexual Partners (MSP) Scale

was divided into two subscales namely, Control Beliefs and Influence on Control Beliefs. The three items on the Control Beliefs subscale were measured on a seven-point Likert-type scale from (1) strongly disagrees to (7) strongly agrees. A sample question was "I have control over my decision to have sex with more than one sexual partner." The 3-item Influence on Control Beliefs subscale was measured on a seven-point Likert-type scale from (-3) less likely to (+3) more likely. A sample question was "If I can control my decision to have sex with more than one partner, i will … do it." The score for each control belief item is multiplied by the relevant influence on control belief score to produce an overall PBC score. Total score ranged from -63 to +63. This scale was easy to score and interpret because higher positive scores indicated higher and favorable PBC against multiple sexual partners (Asare & Sharma, 2010; Waltz et al., 2010).

Internal consistency reliabilities for the Control Beliefs (.65) and Influence on Control Beliefs (.74) were established in US-based Africans (Asare & Sharma, 2010) and indicated medium to high acceptable (Nunnally & Bernstein, 1994) internal consistency reliability. In addition, both subscales had acceptable (r =.70) (Nunnally & Bernstein, 1994) one-week test-retest reliability co-efficient which indicated stability over time (Asare & Sharma, 2010; Nunnally & Bernstein, 1994; Waltz et al., 2010). Confirmatory factor analysis for construct validity of the Control Beliefs subscale confirmed a single factor that accounted for 43% of the variance (Asare & Sharma, 2010; Nunnally & Bernstein, 1994; Waltz et al., 2010). Similarly, confirmatory factor analysis for construct validity of the Influence on Control Beliefs subscale confirmed a single factor that accounted for 61% of the variance (Asare & Sharma, 2010; Nunnally & Bernstein, 1994; Waltz et al., 2010).

In conclusion, the HSSBS had established acceptable face, content, and construct validity, internal consistency, test–retest reliability. The HSSBS was easy to score and understood because higher scores represented intentions to engage in RSB. In addition, HSSBS had a low participant burden because it took approximately 20 minutes to complete (Asare & Sharma, 2010; Nunnally & Bernstein, 1994; Waltz et al., 2010).

Acculturation Strategies for People of African Descent (MASPAD)

Obasi and Leong's (2010) Measurement of Acculturation Strategies for People of African Descent Scale (MASPAD) (Appendix G) was developed based on Berry's (1997) traditionalist, integrationist, assimilationist, and marginalist acculturation strategies. The MASPAD was a bi-dimensional 45-item self-reported and self-administered tool. It was created to measure beliefs and behaviors related to the choice of maintaining one's traditional cultural beliefs and practices and the choice of participating in a different cultural group's beliefs and practices. The MASPAD's psychometric properties were established in multiple studies with a sample of 831 African Americans including male and female Nigerian participants. The mean participant age was 25.52 years (SD = 11.14) with a range of 18 to 87 years (Carmines & Zeller, 1979; DeVellis, 2012; Obasi & Leong, 2010; Waltz et al., 2010).

To establish content and face validity, 96 items were initially generated from a review of acculturation literature and 21 previously published instruments. After pilot studies and seven revisions, 40 items were retained (Carmines & Zeller, 1979; DeVellis, 2012; Obasi & Leong, 2010; Waltz et al., 2010). Five items suggested by the raters were added to the item pool resulting in the current 45-item MASPAD. A sample question for the first sub-scale (D1 or traditionalist) was "I was raised to maintain cultural practices

that are consistent with people of African descent." A sample item for the second sub-scale (D2 or assimilationist) was "I do not feel connected to my African heritage" (Obasi & Leong, 2010). Five specialists in African and African American psychology and culture evaluated MASPAD. The average item rating was acceptable at 3.40 on a 4-point Likert-type scale and there was acceptable interrater agreement for all 45 MASPAD items (Carmines & Zeller, 1979; DeVellis, 2012; Nunnally & Bernstein, 1994; Obasi & Leong, 2010; Waltz et al., 2010).

There was support for concurrent validity of the MASPAD. Based on correlations with Snowden and Hines's (1999) African American Acculturation Scale (AfAAS). The MASPAD correlated (D1= -.28; D2 = .34) with AfAAS scores in the expected directions (Nunnally & Bernstein, 1994; Obasi & Leong, 2010; Waltz et al., 2010). In addition, the MASPAD sub-scales correlated with the bi-dimensional Vancouver Index of Acculturation (VIA) sub-scales (VIA heritage subscale = -.31 to .27; VIA mainstream subscale = -.01 to .03) (Ryder, Alden, & Paulhus, 2000) in the expected directions (Nunnally & Bernstein, 1994; Obasi & Leong, 2010; Waltz et al., 2010). Internal consistency reliability coefficients for the MASPAD sub-scales (D1 = .85 to .87; D2 = .75 to .81) indicated acceptable reliabilities (Nunnally & Bernstein, 1994). The MASPAD also had acceptable (Nunnally & Bernstein, 1994) internal consistencies (.69 to .87) in samples of African Americans (including US-based Nigerians) and US Blacks in several studies (Abdullah, 2013; Abdullah, & Brown, 2012; Obasi & Leong, 2009).

The discriminant validity of the MASPAD was evaluated with Diener, Emmons, Larson, and Griffin's (1985) Satisfaction with Life Scale (SWLS). There was evidence of discriminant validity between MASPAD and SWLS because there were no significant

correlations (r = -.016 to .158) between both measures, indicating that the MASPAD measured a construct that was different from satisfaction with life as measured by the SWLS (Nunnally & Bernstein, 1994).

Predictive validity of the MASPAD was established in Obasi et al.'s study (2009) that revealed that it was a better predictor of cultural worldview and values when compared to the African American Acculturation Scale (AfAAS) (Nunnally & Bernstein, 1994; Obasi & Leong, 2010; Waltz et al., 2010). The MASPAD was therefore an appropriate measure to use in this study to explore acculturation levels of US-based Nigerians (Obasi & Leong, 2010; Waltz et al., 2010).

The 45-item MASPAD was scored on a 6-point Likert type scale from (1) strongly disagree to (6) strongly agree. Scores on the D1 or traditionalist sub-scale range from 22 to 132, while scores on the D2 or assimilationist sub-scale range from 23 to 138. The MASPAD was easy to score and understood because a comparison of total scores from both scales indicated if an individual favors one of the following four acculturation strategies: (a) traditionalist = moderate to high scores on D1 and low scores on D2, (b) integrationist = moderate to high scores on D1 and D2, (c) assimilationist = low scores on D1 and moderate to high scores on D2, or (d) marginalist = low scores on D1 and D2. In conclusion, the MASPAD had established acceptable face, content, and construct validity, and reliability in various samples. MASPAD had a low participant burden because it took approximately 10 minutes to complete (Nunnally & Bernstein, 1994; Obasi & Leong, 2010; Waltz et al., 2010).

Gender

Gender was assessed as an item on the demographic data form: The question was

"Please check your gender (0 = male or 1 = female).

Demographic Data Sheet

A demographic data sheet (Appendix H), was used to gather data about participants' age, US state of residency, gender, Nigerian tribe, country of birth, length of stay in the US, marital status, educational level, occupation, and religion.

Data Collection Procedures

Data collection commence after obtaining approval (Appendix I) from Rutgers Institutional Review Board (IRB). Study participants were recruited electronically via five email Listservs comprised of members from US-based Nigerian communities across the US. The five Nigerian community leaders who were also members of the organization and who had access to the Listservs forwarded an initial email message (Appendix J) from the PI to the Listserv reflector email address. The PI's email message was then distributed by the reflector address software to all members of the Listservs. The email message from the PI included an explanation of the study and Visa gift care incentive, an invitation to participate, a link to the study consent letter (Appendix K) and electronic survey, and PI contact information. The Nigerian leaders or the PI did not know the identity of respondents. Therefore, non-responders were not tracked. Follow-up with members on the Listserv email list was in accordance with a modified Tailored Design Method (TDM) for repeated email contacts (Dillman, et al., 2009, Dillman, Smyth, & Christian, 2014).

The Modified Tailored Design Method (TDM)

A Tailored Design Method refers to adapting survey design and procedures to suite a particular population and survey (Dillman et al., 2009; Dillman, Smyth, &

Christian, 2014). Dillman and his colleagues suggested a five-contact e-mail approach for initial and follow-up e-mails to potential participants. The first follow-up e-mail was sent three days after the initial e-mail. The second, third, fourth, and fifth follow-up e-mails are sent at 10 days, fourth and fifth weeks after the initial e-mail contact (Dillman, et al., 2014). Since the Tailored design allowed for modification, I modified the timing of my follow-up e-mails (Appendix L) to allow sufficient time for potential subjects to access their e-mail and to respond before sending out reminders to them. My follow-ups with e-mail contacts were to occur at the first, third, fifth, and seventh weeks after the initial e-mail contact.

My modified protocol was as follows. After the initial email contact, two subsequent email contacts were made. Since there was no way to track survey responders and non-responders, repeated emails contacts about the study was sent to all members on the Listservs via each Listserv reflector email address. One week after the initial e-mail, the five Nigerian community leaders forwarded a second email from the PI to the entire Listserv via each Listserv reflector email address. The email message began with a thank you to Listserv members who responded and a reminder to non-responders. The remainder of the message in the email included the same information in the initial email and the link to the study consent letter and electronic survey. Two weeks after the second e-mail was sent, a third e-mail from the PI was forwarded to the entire members of each Listserv via the Listserv reflector email address by the five Nigerian community leaders. The message in this third email was the same as in the second email.

The Tailored Design Method (TDM) (Dillman, et al., 2009, Dillman, Smyth, & Christian, 2014) recommended four reminder e-mails and suggested that further e-mail

contacts may be discontinued if the required sample size was obtained prior to the planned number of repeated contacts. Thus, since the proposed sample size was 108, and there were 178 respondents by the end of the fourth week, e-mail reminders were discontinued.

Once participants accessed the study via the electronic link, they will first read an online consent letter that included the following information: (a) an explanation of the study and an invitation to participate, (b) an assurance of anonymity and the participants' right to choose not to participate or to terminate participation at any time without any penalty to them, (c) a summary of risks and benefit, and (d) contact information for the PI and Rutgers IRB. Participants were informed in the consent letter that completion of the survey served as their consent to participate. Rationale for waiver of consent documentation included: (1) minimal risk, (2) anonymity (3) right to withdraw from the study at any time without penalty, and (4) inability to contact participants because contact information were not requested.

As a recruitment incentive, a chance drawing for a $150 Visa gift card was raffled. At the end of the electronic survey, participants were invited to participate in the chance drawing. A link was provided to a chance-drawing enrollment form on which participant typed in their email addresses. These separate e-mail address list was used by the PI to contact the winner. This chance drawing enrollment form was not linked back to participant responses on the electronic survey and was available only to the PI. The e-mail list was accessed only by the PI after data analysis was completed to randomly select a winner. Microsoft Excel was used to randomized the e-mail addresses and to pick a winner. The winning e-mail was used to contact the winner in order to obtain a mailing

address for purposes of sending the gift card via US. postal, return-receipt mail.

Plan for Data Analysis

A statistical database was created by the PI using the Statistical Package for the Social Sciences (SPSS) version 22.0 for Windows (SPSS, 2014). Demographics, Intention, Attitudes, Subjective Norms, Perceived Behavioral Control, and Acculturation data from survey responses were entered into the SPSS database by the PI. Raw data were reviewed for inconsistencies, omissions and outliers. A descriptive analysis of the demographic data was conducted to describe the sample characteristics. Descriptive characteristics of the sample was quantified using means, standard deviations and frequencies. Frequency tables, histograms, scatterplots, skewness and kurtosis statistics were examined to assess study variables for approximation of normal distribution.

The instrument scales were computed, and the internal consistency reliability for each scale was determined (Nunnally & Bernstein, 1994). Additionally, data was examined to be sure all assumptions of parametric testing, such as normal distributions, homoscedasticity, multicolinearity, linearity, and undue influence of outlier scores were met (Montgomery, Peck, & Vining, 2012). Although some data were skewed, data transformation was not carried out because transformed data may be more difficult to interpret (Tabachnick & Fidell, 2007).

Prior to hypothesis testing, some variables were re-coded before computing total scores used for hypothesis testing. Three items from the Health and Safer Sex Behavior Survey that were negatively worded were reverse coded. Additionally, six outcome evaluation items for attitudes about condom use and multiple sexual partners (MSP), six items on the motivation to comply with normative beliefs about condom use and multiple

sexual partners (MSP) subjective norms, and six items on the perceived behavioral control (PBC) subscales namely: influence on control beliefs about condom use and MSP were recoded from item responses of -3 to +3 to item responses of 1 to 7. All recoding ensured that affected items had scoring that were consistent with their corresponding subscale. Recoding allowed for ease of interpretation of total scores.

Lastly, a careful examination of missing data points revealed that 5% of scores were missing for the risky sexual behavior (RSB) and acculturation items. To prevent incomplete data for these participants resulting in reduced statistical power for hypothesis testing (Tabachnick & Fidell, 2007; Waltz et al., 2010) missing item values were imputed by replacing each missing value with the mean of the observed values for the specified variable. Coded data set and all data transformations were maintained in an electronic spreadsheet format along with copies of the raw data and the cleaned data sets, descriptive statistics, correlations, regression analyses, syntax and output files. A document file was appended to the electronic database with PI notes regarding the analysis file.

Correlational analysis of the study variables were conducted using Pearson Product Moment Correlation. Although, the hypothesized relationships were directional, to be consistent with a conservative approach, a two-tailed test of significance was set at .05. (Polit & Beck, 2013). The correlation matrix was examined to determine if attitudes and perceived behavioral control covariates in addition to other demographic variables were significantly correlated with the dependent variables. Those covariates and demographic variables that were significantly related to condom use and multiple sexual partner (MSP) intentions were controlled for in multivariate analyses.

Correlational analyses were used to test hypotheses one through eight. Correlation matrices were examined to determine if: (1) subjective norms was significantly related to condom use and MSP intentions, and (2) if gender and acculturation were significantly related to condom use and MSP intentions. To test hypotheses nine and ten, two hierarchical regression analyses were conducted. For the first regression, the extent to which subjective norms, gender, and acculturation were independently related to condom use intentions was examined. Covariates and demographic variables that were significantly related to condom use intentions in correlational analysis were entered into the regression model in the first step. In the second step, subjective norms, gender, and acculturation variables significantly related to condom use intentions were entered. A second 2-step hierarchical regression as described above was conducted to determine the independent effects of subjective norms, gender, and acculturation on multiple sexual partner (MSP) intentions.

Baron and Kenny's method for mediation testing was utilized to test hypotheses 11 through 14. According to Baron and Kenny (1986), a mediating variable is an intervening or operant mechanism that explains the relationship of the independent variable to the dependent variable. A mediating variable is useful in explaining how a relationship exists between the independent variable and the dependent variable. Baron and Kenny require that the following conditions must be present to establish mediation: (a) the independent variables (gender and acculturation) must be significantly related to the mediator (subjective norms), (b) the independent variables (gender and acculturation) must be significantly related to the dependent variables (condom use and multiple sexual partners intention), and (c) the mediator (subjective norms) must be significantly related

to the dependent variables (condom use intention and multiple sexual partners' intention). Hypotheses 11 to 14 were not tested because the conditions for mediation were not met.

Human Subjects Protection

Study protocol was submitted to the Institutional Review Board (IRB) of Rutgers, the State University of New Jersey to ensure that the rights of human subjects were protected prior to data collection. Expedited IRB review was requested because the design of this study was such that there was only minimal risk to subjects. That is, the magnitude of harm or discomfort anticipated were not greater than would be ordinarily encountered in daily life. Although, the study collected sensitive information about subjects regarding their intention for condom use and their intention for multiple sexual partners, the responses to survey items did not place any participant at risk for civil or criminal liability. The information provided was not stigmatizing and was not damaging to their reputation, insurability, or financial standing.

An online survey was self-administered, and self-reported. Participants were advised of the purpose of the study and their rights in an online consent letter. All participants were informed that completion of the survey served as their consent to participate. Participation in the study was voluntary. Participants may refuse to participate in the study and they were free to refuse to answer any question or to withdraw from the study at any time without any penalty to them. There were no financial costs to participants for participating in the study. The survey took approximately 30 minutes to complete.

The survey was designed so that there were two separate access points and two separate databases. One access point and database was linked directly only to the

survey. The other access point and database was linked directly only to the gift-card drawing form. Participants did not need a code to access the survey because clicking on the survey link took them directly to the survey. I did not request nor collected participants e-mail addresses, IP information or any other contact information or identifiers. Therefore, participants IP information and e-mail addresses were not nor were they stored when participants access the survey. The received responses also did not contain any participants e-mail addresses or IP information. In addition, neither the Nigerian leaders or the PI knew the identity of respondents. Thus, respondents and non-responders were not tracked.

Regarding the e-mail addresses that participants voluntarily submitted after submitting the survey for the $150.00 gift card chance drawing. Any e-mail address submitted to this separately designated link were collected in a separate database that was not connected at all to the survey. This ensure that there was no link between the e-mail list and the survey responses. This chance drawing enrollment form was not linked back to participant responses on the electronic survey and was available only to the PI. The chance drawing e-mail list was accessed only by the PI after study was completed and a winner was randomly selected. The winning e-mail was used to contact the winner to obtain a mailing address for purposes of sending the gift card via US postal, return-receipt mail. This e-mail list was destroyed immediately after a winner was selected. The winners, mailing address was also destroyed immediately the return-receipt indicated that the gift card was received.

The computer and database files were password protected. Only the PI had access to the password. Collected data were entered into the Statistical Package for the

Social Sciences (SPSS) version 22.0 for Windows (SPSS, 2014). Computer files were backed-up on an external drive and secured in a locked file cabinet of which only the PI had access. Collected data for this study were reported only as an aggregate whether verbally or in print. Participant's anonymity were maintained at all times. All electronic files will be destroyed five years after completion of the research study.

Chapter 4

Data Analysis

The purpose of this study was to disentangle the complex interrelationships among subjective norms, gender, acculturation, and the intention to engage in risky sexual behavior (RSB) among US-based Nigerians. Participants for this study were recruited from five US-based Nigerian community Listservs. The final sample consisted of 154 adults who self-identified as US-based Nigerians and ranged in age from 18 to 69 years. The gatekeepers for these five online Nigerian communities were contacted by e-mail. They were the: (a) President, Nigerian Association in the Triad, (b) President, Nigerian Community in Chicago Land, (c) Director of Social and Publicity Secretary, Nigeria Cultural Association, (d) Chairman, Nigerian Independence Day Parade Committee, and (e) Secretary, Oduduwa Unity Club. All five Listservs had a combined membership of approximately 2,000 US-based Nigerians.

The following instruments were used for data collection: (1) a demographic questionnaire developed by the principal investigator (PI) for this study was utilized to gather data about participants' age, gender, country of birth, US state of residency, length of stay in the US, marital status, educational level, occupation, religion, and Nigerian state of ancestral origin; (2) condom use and multiple sexual partner (MSP) intentions,

subjective norms about condom use and MSP, and two covariates (attitudes about condom use and MSP, and perceived behavioral control (PBC) over condom use and MSP) were measured by respective items on the Health and Safer Sex Behavior Survey (HSSBS) (Asare & Sharma, 2010); and (3) acculturation (traditional and assimilation strategies) was measured by items on the Measurement of Acculturation Strategies for People of African Descent Scale (MASPAD) (Obasi & Leong, 2010).

A statistical database was created by the PI using SPSS version 22 for Windows (SPSS, 2014). Data were collected online and downloaded into SPSS using computer generated unique identifiers. Copies of the original data set, variable descriptives, correlations, regression analyses, syntax, output, and analyses notes were created and maintained in password protected computer files. Data were cleaned by inspecting for inconsistencies, outliers, and erroneous data entry codes. Frequency tables and Z-scores were used to assess the distribution of study variables for normality. Tests for skewness and kurtosis were conducted as shown in Table 5.

In accordance with a modified Tailored Design Method (TDM) for repeated e-mail contacts (Dillman, Smyth, & Christian, 2014), there was a process of initial and follow-up contacts with prospective subjects for purposes of recruiting study participants. Participants were recruited electronically from e-mail Listservs of US-based Nigerian communities. Five Nigerian community leaders forwarded e-mail messages from the PI to the Listserv reflector email address. The initial e-mail message from the PI included an explanation and an invitation to participate in the study, a link to the study's informed consent letter and electronic survey, and the PI's contact information. At the completion of the survey, participants were invited to voluntarily participate in a gift card raffle. The

Nigerian leaders and the PI did not know the identity of persons who responded to the survey, therefore the PI was unable to track non-responders.

After the initial e-mail contact, two subsequent e-mail reminders were sent to all Listserv members at the second and fourth weeks after the initial contact. Each follow-up e-mail message began with a thank you to Listserv members who responded and a reminder to non-responders. The remainder of the e-mail message contained the same information that was in the initial e-mail. The TDM (Dillman, et al., 2009, Dillman, Smyth, & Christian, 2014) recommended four reminder e-mails and suggested that further e-mail contacts may be discontinued if the required sample size was obtained prior to the planned number of repeated contacts. Thus, since the proposed sample size was 108, and there were 178 respondents by the end of the fourth week, e-mail reminders were discontinued.

Based on a pool of about 2,000 potential participants, the 178 individuals who responded to this study represented a 9% response rate. This is consistent with Dillman and his colleague's observation that although higher response rates are ideal, evaluation of several studies indicated that response rates with repeated, electronic e-mail reminders in the first four weeks are typically less than 13% (Dillman, et al., 2009, Dillman, Smyth, & Christian, 2014).

Once participants accessed the study via the electronic link, they first read an online consent letter that included the following information: (a) an explanation of the study and an invitation to participate, (b) an assurance of anonymity and the participants' right to choose not to participate or to terminate participation at any time without any penalty to them, (c) a summary of risks and benefits, and (d) contact information for the

PI and Rutgers IRB. Participants were informed in the consent letter that completion of the survey served as their consent to participate. As a recruitment incentive, there was a chance drawing for a $150 Visa gift card. A link to the chance-drawing enrollment form was provided at the end of the electronic survey. This chance drawing enrollment form was not linked back to participant responses on the electronic survey. After data analysis was completed, the e-mail list was accessed by the PI and a winner was randomly selected.

Demographics of the Study Sample

A description of the study sample is presented in Table 1. There were 178 total respondents, 24 of these responses were invalid due to missing data, therefore, the final sample consisted of 154 men and women from five US-based Nigerian community Listservs. The mean age of the sample was 42.31 (SD=13.75) ranging from 18 through 69 years. The majority of participants were female (59.2%) and were born in Nigeria (78.3%). Most (65%) participants lived in the US for over 16 years, while the minority of participants (10.4%) lived in the US for only five years or less. Most participants were married (69.7%), and had graduate level (52.9%) education (M= 16.42) ranging from six to 20 years. Most participants (53.6%) worked in a health related profession, while 17.2% of the participants were students. Most were Christians (90.7%), lived in the Northeast region of the US (64.8%), and originated from the South West region of Nigeria (56.3%).

Table 1.

Sample Demographic Characteristics (N = 154)

Variable		N	%
Age (n=148)		*M* = 42.31	*SD* = 13.75
Gender (n=152)	Male	62	40.8%
	Female	90	59.2%
Birth Country (n=152)			
	U.S.	25	16.4%
	Nigeria	119	78.3%
	Other Country	8	5.3%
Years Lived in the US (n=153)			
	< 1 year	4	2,6%
	1-5 years	12	7.8%
	6-10 years	16	10.5%
	11-15 years	21	13.7%
	16-20 years	34	22.2%
	> 20 years	66	43.1%
Sexual Preference (n=150)			
	With Females	59	39.3%
	With Males	89	59.3%
	With Both Males and Females	2	1.3%
Marital Status (n=152)			
	Married	106	69.7%
	Separated	3	2.0%
	Divorced	6	3.9%
	Never married	37	24.3%
Educational Level (n=153)		*M* = 16.42	*SD* = 3.51
	≤ High School	14	9.1%
	≤ College	58	37.9%
	≤ Graduate	81	52.9%
Occupation (n=151)			
	Health Related	81	53.6%
	Not Health Related	41	27.2%
	Unemployed	3	2.0%
	Student	26	17.2%
Religion (n=151)			
	Christian	137	90.7%
	Muslim	9	6.0%
	Traditionalist	3	2.0%
	None	2	1.3%
US Regional Residency (n=145)			
	North East	94	64.8%
	South East	6	4.1%
	West	11	7.6%
	Mid-West	19	13.1%
	South West	15	10.3%
Nigerian Regional Origin (n=142)			
	South East	43	30.3%
	South West	80	56.3%
	South-South	17	12.0%
	North Central	2	1.4%

Description of Study Variables

Descriptive statistics (mean, standard deviation, range) for study variables are presented in Table 2.

Dependent Variables

There were two dependent variables, condom use intention and multiple sexual partners (MSP) intention. The mean score for condom use intention in this study indicated that participants highly intended to use condoms. Conversely, respondent's low average score for MSP intention indicated that they did not intend to engage in sexual activities with MSP (See Table 2).

Independent Variables

Attitude: The mean score for condom use attitude reflected respondents' favorable attitudes toward using condoms. On the other hand, the average score for multiple sexual partner (MSP) attitudes indicated that participants exhibited low to moderately positive attitudes toward engaging in sexual activities with MSP (see table 2) .

Subjective Norms: On average, the score for condom use subjective norms showed that participants were less favorably inclined to comply with prevailing subjective norms that support condom use. Since majority of the subjects in this study were married, this finding was not surprising because the norm among most married couples in the US or Nigeria is *not* to use condoms. Similarly, the mean score for MSP subjective norms suggests that participants were less inclined to comply with the Nigerian or US socio-cultural norms that permit multiple sexual partnerships (see table 2).

Perceived Behavioral Control: The mean score for condom use perceived behavioral control (PBC) indicated that participants were of the opinion that they could moderately control individual condom use. On the other hand, respondents seemingly perceived that they had a moderately low ability to control themselves from engaging in sex with multiple sexual

partners (see table 2).

Acculturation: The relatively high mean score for the traditional subscale of acculturation indicated that some respondents favor the traditionalist acculturation strategy (see table 2). Individuals who are traditionalist strongly value and hold on to their originating country's culture and traditions. Thus, their interactions with the host country's socio-cultural norms are minimal. Conversely, immigrants who are assimilated into another country's culture have chosen to adopt the socio-cultural norms and traditions of the host country while letting go of the socio-cultural values of their country of origin (Berry, 1997; Berry et al., 2012; Sam & Berry, 2006). With this in mind, the moderate mean score (see Table 2) achieved by this sample indicated that some respondents had assimilated into the US culture and are disengaged from Nigerian socio cultural beliefs.

On the other hand, those who adopted an integrationist acculturation strategy are able to achieve a balance between their traditional and their adopted country's socio-cultural norms. They are able to embrace the host country's socio-cultural norms while still maintaining their traditional socio-cultural norms and traditions. At the other end of the acculturation spectrum are those who favor marginalization as an acculturation strategy. These individuals are not interested in maintaining their traditional socio-cultural norms. They are also not interested in adopting the host country's cultural values (Berry, 1997; Berry et al., 2012; Sam & Berry, 2006). Acculturation may be difficult for this group of immigrants because being culturally marginalized is equivalent to seating on the fence that separates two cultures.

Table 2.

Descriptive Statistics of the Study Variables

Variable	Possible Score Range	Mean	SD	Actual Score Range
Intention: Condom	3-21	12.08	6.60	3-21
Intention: MSP	3-21	4.84	3.99	3-21
Attitude: Condom	3-147	117.18	37.88	3-147
Attitude: MSP	3-147	79.27	50.59	3-147
SN: Condom	3-147	45.12	36.72	3-147
SN: MSP	3-147	9.49	11.49	3-58
PBC: Condom	3 -147	75.02	36.93	3-147
PBC: MSP	3-147	64.34	33.57	9-147
Traditional Acculturation	22-132	98.18	13.46	66-129
Assimilation Acculturation	23-138	69.45	10.60	42-113

MSP = Multiple Sexual Partner(s), SN = Subjective Norms, PBC = Perceived Behavioral Control

Acculturation Strategy: A comparison of total scores on both acculturation subscales determined the acculturation strategy utilized by respondents. As presented in Tables 3 and 4, in this sample of US-based Nigerians, 37 participants (24%) were traditionalist, while 116 individuals (76%) favored integrationist acculturation strategies. A comparison of the traditional and assimilationist subscale scores indicated that on the average, this sample of US-based Nigerians utilized the integrationist acculturation strategy. This was consistent with Obasi and Leong (2010) operational definition and criteria that individuals who obtained moderate to high scores on both the traditional and assimilationist subscales favor an integrationist acculturation strategy. Thus, this sample was more integrationist than traditionalist.

Table 3.

Descriptive Statistics of Participants' Acculturation Strategies

	Assimilation (low scores) N (%)	Assimilation (moderate to high scores) N (%)
Traditional (low Scores)	0 (0%)	0 (0%)
Traditional (moderate to high scores)	37 (24%)	116 (76%)
Acculturation Strategy	Traditionalist	Integrationist

Table 4.

Descriptive Statistics of Participants' Acculturation Strategies by Gender (n=152)

	Traditionalist **N (%)**	Assimilationist **N (%)**
Male	10 (7%)	52 (34%)
Female	27 (18%)	63 (41%)

Reliability

Internal consistency reliability coefficients for study variables are presented in Table 5. A study variable that achieves a reliability coefficient alpha of .70 or greater demonstrates an acceptable level of reliability. Coefficients greater than .80 are preferred (Nunnally & Bernstein, 1994; Polit & Beck, 2013). Out of 16 study variables, the reliability coefficients for 13 variables, as listed in Table 5, were .70 or greater, demonstrating acceptable internal consistency for each variable (Nunnally & Bernstein, 1994). Two of the scales, condom use perceived behavioral control scale ($\alpha = .499$) and the assimilationist acculturation subscale ($\alpha = .593$), demonstrated moderate internal consistency for each variable. The reliability coefficient for the multiple sexual partner (MSP) perceived behavioral control scale ($\alpha = .360$) was low and consistent with the

reliability for this scale in previous research (Asare & Sharma, 2010).

Table 5.

Alpha Coefficients for Study Instruments

Study Instrument	Cronbach's alpha coefficient
Intention: Condom	.967
Intention: MSP	.897
Attitude-Condom: Behavioral Beliefs Subscale	.891
Attitude-Condom: Outcome Evaluation Subscale	.888
Attitude-MSP: Behavioral Beliefs Subscale	.965
Attitude-MSP: Outcome Evaluation Subscale	.880
SN-Condom: Normative Beliefs Subscale	.845
SN-Condom: Motivation to Comply Subscale	.777
SN-MSP: Normative Beliefs Subscale	.764
SN-MSP: Motivation to Comply Subscale	.868
PBC-Condom: Control Beliefs Subscale	.499
PBC-Condom: Influence on Control Beliefs Subscale	.780
PBC-MSP: Control Beliefs Subscale	.360
PBC-MSP: Influence on Control Beliefs Subscale	.694
Traditionalist Subscale	.827
Assimilationist Subscale	.593

MSP = Multiple Sexual Partner(s); SN = Subjective Norms; PBC = Perceived Behavioral Control

Data Management

Data management consisted of a series of data checking methods. The data were cleaned and verified as recommended by Polit and Beck (2013). Data were inspected and checked for invalid and missing values, and identifiable patterns of expectancy such as inconsistencies in individual variable range. Out of the 178 total responses, 24 participant

survey responses were invalid due to missing data. The missing data on these surveys appeared systematic. Eight participants did not respond to any item, and the remaining 16 participants responded to acculturation items but did not respond to any of the theory based risky sexual behavior items. The 24 participants who did not complete the survey cannot be compared to other participants because they did not answer the demographic questions at the end of the survey. Data from these 24 participants were not included in any of the analyses.

Of the remaining 154 participants with valid surveys, 61 participants submitted electronic surveys with missing data for one to three items, and three participants submitted the electronic survey with up to five items with missing values. An analysis of missing variable scores for these participants revealed less than 5% of scores were missing for the acculturation and risky sexual behavior items. To prevent incomplete data for these participants resulting in reduced statistical power for hypothesis testing (Tabachnick & Fidell, 2007), missing item values were imputed by replacing each missing value with the mean of the observed values for the specified variable. A comparison of groups, consisting of participants with true variable scores and participants with imputed variable scores is presented in Table 6.

Table 6.

Variable True Mean versus Imputed Mean

Variable	True Variable Scores			Variable Scores with Imputed Item Values		
	N	Mean	SD	N	Mean	SD
African naming ceremony	153	4.82	1.68	1	4.82	-
African heritage	152	1.42	.95	2	1.42	.00
Maintains African culture	150	5.23	1.30	4	5.06	.16

Variable	True Variable Scores			Variable Scores with Imputed Item Values		
	N	Mean	SD	N	Mean	SD
Difficulty with Black ideas	153	2.82	1.42	1	2.82	-
Respect elders	153	5.87	.509	1	5.87	-
Equal financial oppor.. in US	152	4.01	1.75	2	4.01	.01
Putting on mask to fit in	153	2.65	1.60	1	2.65	-
Maintain cultural beliefs	153	5.39	.837	1	5.39	-
Behave like Africans	153	4.74	1.22	1	4.74	-
Behave different in public	152	2.89	1.64	2	2.95	.08
Spiritual person	152	5.23	1.20	2	5.12	.16
Give back to the earth	148	3.93	1.41	6	3.99	.03
Consider self to be religious	153	5.41	1.13	1	5.41	-
Involved with Blk community	152	4.28	1.41	2	4.14	.20
"Communalistic”	147	4.06	1.39	7	4.01	.02
Socialize with few Blacks	153	2.92	1.68	1	2.92	-
Actively support Blk business	153	4.37	1.37	1	4.37	-
Exhibit multi-cultural values	151	2.65	1.47	3	2.88	.20
Socialized-support Blk business	153	3.12	1.55	1	3.12	-
Beliefs shaped by religion	153	4.87	1.48	1	4.87	-
Friends from varied culture	152	3.89	1.75	2	3.95	.08
Prefer Blk entertainment	153	3.94	1.50	1	3.94	-
Buy products of Africans	152	3.57	1.56	2	3.79	.30
Festivals retain comm. Balance	151	3.97	1.51	3	3.99	.02
Perform rites for ancestors	153	1.78	1.34	1	1.78	-
Assimilate for finan. Success	153	3.75	1.63	1	3.75	-
Africans must know their histo	151	5.28	1.02	3	5.09	.16
Involved in African spiri. Sys.	152	2.61	1.67	2	2.80	.28
Prefer written contracts	151	3.53	1.72	3	3.84	.27
Americans should speak Eng.	153	1.84	1.35	1	1.84	-
Probably marry non black	152	2.34	1.46	2	2.17	.24
Appreciate African art/music	152	5.16	1.14	2	5.08	.11
Indiv. impt than comm success	151	2.99	1.48	3	3.00	.01
Exposed to various media	152	4.99	1.26	2	5.00	.08
Blk-no reparation re: slavery	148	2.94	1.68	6	2.99	.02
Tolerate injustice of Africans	152	1.90	1.27	2	1.95	.07
Will try regular condom use	153	4.07	2.29	1	4.07	-
Will prevent unwanted preg.	153	6.18	1.47	1	6.18	-
Condoms for STD prev. is impt.	153	6.31	1.43	1	6.31	-
Friends encourage condom use	153	4.29	2.14	1	4.29	-

Variable	True Variable Scores			Variable Scores with Imputed Item Values		
	N	Mean	SD	N	Mean	SD
Family encourage condom use	150	4.26	2.18	4	4.07	.13
Partner encourage condom use	153	3.88	2.17	1	3.88	-
Fam approve of condom is impt.	153	2.98	2.11	1	2.98	-
Partner approve of condom-impt.	153	4.37	2.38	1	4.37	-
Confident I can use condoms	153	5.18	1.96	1	5.18	-
Will use condoms if confident	153	5.41	1.88	1	5.41	-
May use condoms if in control	153	4.71	2.11	1	4.71	-
Plan to have sex with MSP	153	1.53	1.33	1	1.53	-
One partner for HIV prev- impt.	153	6.33	1.38	1	2.33	-
One partner to prevent unwanted preg. is impt.	153	5.74	1.81	1	5.74	-
One partner for STD prev- impt.	153	6.33	1.42	1	6.33	-
Friends encourage sex with MSP	153	1.67	1.51	1	1.67	-
Friends approval of MSP is impt.	153	1.93	1.80	1	1.93	-
Fam approval of MSP is impt.	153	2.09	2.00	1	2.09	-
Partner approval of MSP is impt.	152	2.39	2.14	2	2.20	.28
I control decision to have MSP	153	6.19	1.69	1	6.19	-
If I wish, I can have MSP	153	4.39	2.46	1	4.39	-
Decision to have MSP is beyond my control	153	6.39	1.58	1	1.58	-

Data quality was further examined to assess scores for symmetry and approximation to normal distributions. The distribution of scores for all study variables was assessed by visually inspecting for skewness (evidence of central tendency) and kurtosis (evidence of tail heaviness relative to the total variance in the distribution). Fisher's skewness coefficient was utilized to determine the extent of the skew. The degree of skewness was computed by converting the skewness statistic for each study variable to Z-scores (measure of skewness/standard error of skewness). A Z-score between +1.96 and -1.96 represented a normal score distribution (Tabachnick & Fidell, 2007), and six study variables were normally distributed as presented in Table 7. Data

transformation could be considered for negatively skewed scores as were observed for condom use attitudes, and traditionalist acculturation scores. Data transformation could also be considered for positively skewed but non-normally distributed data as observed for multiple sexual partner (MSP) intention, subjective norms about condom use, and multiple sexual partner (MSP) subjective norms. Data transformation was not carried out because Tabachnick and Fidell (2007) suggest that data transformation is not universally recommended because transformed data may be more difficult to interpret.

Table 7.

Distribution of Scores for Study Variables

	Skewness	S.E Skewness	Kurtosis	S.E. Kurtosis	Fisher's Skewness Coefficient (Z-score)
Intention: Condom	-.052	.195	-1.428	.389	-0.27
Intention: MSP	2.329	.195	4.654	.389	11.94
Attitude: Condom	-1.312	.195	.747	.389	-6.73
Attitude: MSP	-.066	.195	-1.615	.389	-0.34
SN: Condom	1.167	.195	.972	.389	5.98
SN: MSP	2.398	.195	5.559	.389	12.29
PBC: Condom	.231	.195	-.719	.389	1.18
PBC: MSP	.240	.195	-.761	.389	1.23
Traditionalist Acculturation	-.421	.195	-.145	.389	-2.16
Assimilationist Acculturation	.342	.195	1.258	.389	1.75
Age	-.392	.199	-.979	.396	-1.97

MSP = Multiple Sexual Partner(s); SN = Subjective Norms; PBC = Perceived Behavioral Control

Results of hypothesis Testing

Prior to hypothesis testing, several variables were re-coded before computing total scores used for hypothesis testing.

Reverse Coded items

Three items from the Health and Safer Sex Behavior Survey (HSSBS, Appendix A) that were negatively worded were reverse coded prior to computing scale scores. Two items from the control beliefs subscale regarding Perceived Behavioral Control (PBC) about condom use: (a) question # 16, "It is difficult for me to use a condom every time I engage in sexual intercourse", and (b) question # 18, "the decision to use a condom during sexual intercourse is beyond my control" that were negatively worded were reversed coded so that scoring on the Likert like scale of 1 to 7 (strongly disagree - strongly agree) were reversed from 7 to 1 (strongly disagree - strongly agree) to be consistent with scoring on its corresponding Influence on Control Beliefs subscale.

One item from the control beliefs subscale regarding PBC about multiple sexual partners, question # 39, "the decision to have sex with more than one partner is beyond my control" that was negatively worded was reversed coded so that scoring on the Likert like scale of 1 to 7 (strongly disagree - strongly agree) was reversed from 7 to 1 (strongly disagree - strongly agree) to be consistent with scoring on its corresponding Influence on Control Beliefs subscale.

Re-coded Subscales

Attitudes Scale: Six outcome evaluation items for attitudes about condom use and multiple sexual partners (MSP) were re-coded from item responses of -3 to +3 (extremely unimportant to extremely important) to item responses of 1 to 7 (extremely unimportant to extremely important). Recoding ensured ease of total score interpretation for condom use attitudes and multiple sexual partner attitudes. Recoding also ensured consistent scoring with each corresponding behavioral beliefs subscale. New possible

total score range on each attitude scale ranged from three to 147.

Subjective Norms Scale: The six items on the subjective norms subscales namely: motivation to comply with normative beliefs about condom use and multiple sexual partners (MSP) were recoded from item responses of -3 to +3 (not at all important to very much important) to 1 to 7 (not at all important to very much important). This ensured ease of interpretation of the total scores for subjective norms about condom use and MSP scales. This was also consistent with scoring on its corresponding normative beliefs subscale. The new possible total scores on each subjective norms scale ranged from three to 147.

Perceived Behavioral Control Scale: The six items on the perceived behavioral control (PBC) subscales namely: influence on control beliefs about condom use and MSP were recoded from item responses of -3 to +3 (less likely to more likely) to item responses of 1 to 7 (less likely to more likely) to be consistent with scoring on its corresponding control beliefs subscale. It also made for ease of interpretation for the total score range for PBC about condom use and MSP. The new possible total score for each PBC scale ranged from three to 147.

Correlation matrices of the study variables are presented in Tables 8 and 9. Prior to hypothesis testing, correlational analyses were conducted to determine if there were any demographic variables that were significantly correlated to the dependent variables (condom use and MSP intentions). Significant relationships were found between condom use intention and age, years living in the US, marital status, and occupation. There were also significant relationships between MSP intention, gender, sexual preference, marital status, and occupation. These variables were controlled for in regression analyses.

Table 8.

Correlations Coefficients for Study Variables

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Intention: Condom	1.00										
2. Intention: MSP	.133	1.00									
3. Attitude: Condom	.316**	.052	1.00								
4. Attitude: MSP	.055	-.045	.015	1.00							
5. SN: Condom	.441**	.168*	.273**	.017	1.00						
6. SN: MSP	.102	.235**	-.095	-.040	.180*	1.00					
7. PBC: Condom	.534**	.103	.285**	.183*	.235**	-.026	1.00				
8. PBC: MSP	.277**	.313**	.079	-.010	.234**	.157	.164*	1.00			
9. Traditional Acculturation	.020	.041	.231**	.054	.087	.011	-.015	.131	1.00		
10. Assimilation Acculturation	.015	.287**	.037	-.025	.197*	.046	-.077	.070	-.005	1.00	
11. Gender	-.014	-.279**	.000	-.033	-.084	-.129	-.142	-.219**	.077	-.233**	1.00

*Correlation is significant at 0.05 level (2-tailed), ** Correlation is significant at <.01 level (2-tailed)

MSP = Multiple Sexual Partner(s), SN = Subjective Norms, PBC = Perceived Behavioral Control

Table 9.

Correlations Coefficients for Intention, Subjective Norms, and Background Factors

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Intention: Condom	1.00												
2. Intention: MSP	.133	1.00											
3. SN: Condom	.441**	.168*	1.00										
4. SN: MSP	.102	,235**	.180*	1.00									
5. Traditional Acculturation	.020	.041	.087	.011	1.00								
6. Assimilation Acculturation	.015	.287**	.197*	.046	-.005	1.00							
7. Age	-.283**	-.094	-.092	-.013	.093	-.060	1.00						
8. Gender	-.014	-.279**	-.084	-.129	.077	-.233**	-.235**	1.00					
9. U.S. Years	.165*	-.089	.017	.012	-.013	-.198*	.332**	.053	1.00				
10. Sexual Preference	.016	.255**	.087	.156	-.073	.195*	.175*	-.845**	-.081	1.00			
11. Married	-.361**	-.198*	-.080	-.070	-.029	-.030	.685**	-.164*	.082	.122	1.00		
12. Never Married	.382**	.242**	.126	.123	.032	.038	-.789**	.155	-.089	-.109	-.861**	1.00	
13. HR Occupation	-.248**	-.180*	-.106	-.089	.169*	-.053	.287**	.322**	.159	-.320**	.263**	-.301**	1.00
14. Student	.241**	.202*	.093	.027	.053	.010	-.643**	.062	-.201*	.028	-.595**	.691**	-.496**

*Correlation is significant at 0.05 level (2-tailed), ** Correlation is significant at <.01 level (2-tailed)
SN = Subjective Norms, MSP = Multiple Sexual Partner(s), HR = Health Related

Hypotheses one through eight were tested using Pearson Product Moment Correlation and linear regression. Two-tailed tests of significance set at the .05 level were used to test hypothesized relationships between risky sexual behavior (condom use and multiple sexual partners), subjective norms, acculturation, and gender.

Hypothesis 1

Hypothesis 1 proposed that subjective norms about risky sexual behavior were significantly related to condom use intention. Correlational analysis indicated a significant relationship between subjective norms and condom use intention in the theoretically expected direction ($r = .441$, $p = .000$). This meant that participants who subscribed to condom use subjective norms also intended to use condoms. Hypothesis 1 was supported.

Hypothesis 2

Hypothesis 2 indicated that subjective norms about risky sexual behavior was significantly related to multiple sexual partner (MSP) intention. Findings indicated a significant correlation between subjective norms and the intention to engage in sexual activities with multiple sexual partners in the theoretically expected direction ($r = .168$, $p = .038$). That is, those who complied with multiple sexual partner subjective norms intended to engage in sex with MSP. Hypothesis 2 was supported.

Hypothesis 3

Hypothesis 3 proposed that gender was significantly related to condom use intention. Correlational analysis revealed that gender was not significantly related to condom use intention ($r = -.014$, $p = .866$). Therefore, hypothesis 3 was not supported.

Hypothesis 4

Hypothesis 4 indicated that gender was significantly related to MSP intention. Correlational analysis showed that gender was negatively and significantly related to MSP intention ($r = -.279$, $p = .000$). That is, male gender was significantly associated with the intention to engage in sexual activities with multiple sexual partners (MSP). Hypothesis 4 was supported.

Hypothesis 5

Hypothesis 5 proposed that acculturation is significantly related to condom use intention. Findings revealed that neither traditionalist acculturation ($r = .020$, $p = .805$) nor assimilationist acculturation ($r = .015$, $p = .857$) were significantly related to condom use intention. Therefore, hypothesis 5 was not supported.

Hypothesis 6

Hypothesis 6 indicated that acculturation was significantly related to multiple sexual partner (MSP) intention. Correlational analysis indicated that, although traditionalist acculturation was not significantly related to MSP intention ($r = .041$, $p = .617$), assimilationist acculturation ($r = .287$, $p = .000$) was significantly associated with MSP intention but not in the in the theoretically expected direction. This meant that those who were assimilated into the US culture intended to have sex with multiple sexual partners. Therefore, those respondents who have adopted the US socio-cultural norms, either still held on to the Nigerian socio-cultural norms or have adopted the US norm of engaging in sexual activities with MSP. Hypothesis 6 was partially supported.

Hypothesis 7

Hypothesis 7 proposed that gender was significantly related to subjective norms.

However, findings show that neither subjective norms for condom use (r = -.084, p = .302) nor subjective norms for multiple sexual partner (r = -.129, p = .112) were correlated with gender. Hypothesis 7 was not supported.

Hypothesis 8

Hypothesis 8 indicated that acculturation is significantly related to condom use subjective norms. Findings revealed that (a) traditional acculturation was not correlated with condom use subjective norms (r = .087, p = .282). Assimilation acculturation was however, significantly and positively related to condom use subjective norms (r = .197, p = .014). That is, those who were assimilated or adopted the US socio-cultural norms about condom use intended to use condoms. Hypothesis 8 also stipulated that acculturation was significantly related to multiple sexual partner (MSP) subjective norms. Findings revealed that traditional acculturation (r = .011, p = .889) and assimilation acculturation (r = .046, p = .573) were not related to subjective norms for MSP.

Therefore, although a relationship between acculturation and subjective norms for multiple sexual partners was not supported in this hypothesis, the relationship between assimilation acculturation and subjective norms for condom use was partially supported. Therefore, hypothesis 8 was partially supported.

Hypothesis 9

Hypothesis 9 proposed that when attitudes and perceived behavioral control (PBC) about condom use are controlled for, gender, level of acculturation, and subjective norms would be independently related to condom use intention. Findings indicated that condom use attitudes (r = .316, p = .000) and PBC about condom use (r = .534, p = .000) were significantly and positively related to condom use intention. In addition, age (r = -.283, p

= .000), length of time in US (r = .165, p = .041), never married (r = .382, p = .000), health related occupation (r = -.248, p = .002), and being a student (r = .241, p = .003) were also related to condom use intention. Correlation analysis also revealed that being a student was highly correlated with being never married (r = .691, p = .000). Therefore, the student variable was not entered into the regression models to avoid multicollinearity (Tabachnick & Fidell, 2007). On the other hand, levels of acculturation (traditional (r = .020, p = .805), assimilation (r = .015, p = .857) and gender (r = -.2014, p = .866) were not related to condom use intention and were not entered into the regression model.

To test hypothesis 9, a 2-step linear regression analysis was conducted to determine the independent association between condom use subjective norms and condom use intention when effects of all covariates were controlled in the model. In Model 1 (see Table 10), all covariates were entered simultaneously. Three covariates, including PBC about condom use (β = .373, p = .000), attitudes about condom use (β = .166, p = .018), and length of time in the US (β = .155, p = .041), were independent predictors of condom use intention when the effects of other covariates in the model were controlled. All covariates in Model 1, taken together, contributed 41% of the variance in condom use intention. In Model 2, when subjective norms about condom use was added to the model, and the effects of covariates were controlled for, subjective norms about condom use remained significantly associated with condom use intention and contributed an additional 7% of the variance in condom use intention scores.

Table 10.

Independent Associations Between Condom Use Intention, Subjective Norms, Attitudes, Perceived Behavioral Control, and Background Factors.

Model 1	**Standard β**	**R^2 change**	**Sig.**
		.410	
Attitude: Condom	**.**166		**.**018
Perceived Behavioral Control: Condom	.373		.000
Age	-.082		.486
U.S. Years	.155		.041
Never been Married	.197		.086
Health Related Occupation	-.129		.067
		.065	
Model 2			
Attitude: Condom	.102		.136
Perceived Behavioral Control: Condom	.336		.000
Age	-.084		.456
U.S. Years	.160		.026
Never been Married	.185		.089
Health Related Occupation	-.112		.094
Subjective Norms: Condom	.270		.000

Hypothesis 10

Hypothesis 10 indicated that when attitudes and perceived behavioral control (PBC) about multiple sexual partners (MSP) are controlled for, gender, level of acculturation, and subjective norms would be independently related to MSP intention. Correlational analysis findings showed that PBC (r = .313, p = .000) was related to MSP intention but attitudes about multiple sexual partners (r = -.045, p = .580) was not. In addition, several demographic variables were significantly related to MSP intention including sexual preference (r = .255, p = .002), never married status (r = .242, p = .003) and being employed in a health related occupation (r = -.180, p = .028). Although, being a student was significantly and positively related to multiple sexual partners intention (r = .202, p = .013), it was not entered in the regression model to avoid multicollinearity. Lastly, the

main study variables, subjective norms about multiple sexual partners (r = .235, p = .003), assimilation acculturation (r = .287, p = .000), and male gender (r = -.279, p = .000) were significantly related to MSP intentions.

Table 11 shows the results of a 2-step linear regression analysis conducted to determine independent associations between multiple sexual partner (MSP) subjective norms, gender, and assimilation acculturation when effects of covariates were controlled for. With all covariates in the first model, perceived behavioral control (PBC) for MSP (β = .276, p = .000), sexual preference (β = .225, p = .006), and never married status (β = .264, p = .001) were independent predictors of multiple sexual partner (MSP) intention when effects of all other covariates in the model were controlled for. Taken together, all covariates in Model 1 contributed 22% of variance in MSP intention scores.

In Model 2, subjective norms about multiple sexual partners, gender, and assimilation were added. In this model, only assimilation acculturation (β = .214, p = .004) was an independent predictor of MSP when the effects of all other covariates and main study variables were in the model. Assimilation, gender and MSP subjective norms contributed an additional 7% of the variance for MSP intention.

Table 11.

Independent Associations Between Multiple Sexual Partners Intention, Subjective Norms, Perceived Behavioral Control, Assimilation, and Background Factors

Model 1	**Standard β**	**R^2 change .222**	**Sig.**
Perceived Behavioral Control: Multiple Sexual Partner	**276**		**.000**
Sexual Preference	**.225**		**.006**
Health Related Occupation	-.006		.943
Never Married	**.264**		**.001**
Model 2		**.073**	
Perceived Behavioral Control: Multiple Sexual Partner	.245		.001
Sexual Preference	.031		.816
Health Related Occupation	.001		.986
Never Married	.242		.002
Assimilation	.214		.004
Gender	-.166		.226
Subjective Norm: Multiple Sexual Partner	**.128**		**.086**

Hypotheses 11 through 14

Baron and Kenny (1986) explicated that a mediating variable is an intervening or operant mechanism that explains the relationship of the independent variable to the dependent variable. Therefore, a mediating variable is useful in explaining how a relationship exists between the independent variable and the dependent variable. To establish mediation, Baron and Kenny (1986) require that: (a) the independent variables (gender and acculturation) must be significantly related to the mediator (subjective norms), (b) the independent variables (gender and acculturation) must be significantly related to the dependent variables (condom and multiple sexual partners intention), and (c) the mediator (subjective norms) must be significantly related to the dependent variables (condom and multiple sexual partners' intention). Thus, hypotheses

11 to 14 were not tested because the conditions for mediation were not met.

Chapter 5

Discussion

This chapter provides a summary and interpretation of study findings. The Theory of Planned Behavior (Ajzen, 1985, 2012) and the acculturation framework (Berry, 1997; Berry et al., 2012) were utilized to analyze the hypothesized relationships between risky sexual behavior (RSB), acculturation, and gender among US-based Nigerians. The specific Theory of Planned Behavior (TPB) constructs explored in this study were condom use and multiple sexual partner intentions (dependent variables), subjective norms (independent variable), attitudes and perceived behavioral control (co-variates). Acculturation and gender were explored as background factors (Ajzen & Klobas, 2013).

Ajzen (1985, 2012) proposed that intention is the immediate antecedent of behavior. Therefore, the intention to engage in a behavior is an indication of an individual's inclination to engage or not engage in that behavior. Some theories postulate that in order to minimize socially desirable responses to questions about risky health behaviors such as RSB, the single best predictor of an individual's behavior is the intention to engage in that behavior (Webb & Sheeran, 2006). Therefore, the exploration of RSB intentions as conducted in this study in lieu of actual behavior is supported by empirical literature. The TPB constructs used in this study, as co-variates are also theoretically important because the theorist proposed that, in addition to subjective norms, attitudes and perceived behavioral control (PBC) are also antecedents to intention (Ajzen, 1985, 2012).

Condom Use Intention

In this study, participants were moderately favorable toward condom use intention (M = 12.08, range = 3 to 21). This is similar to findings from a US-based African immigrant sample of 110 Ghanaians in which participants were also moderately favorable (M = 10.78, range = 3 to 21) towards the intention to use condoms (Asare and Sharma, 2010). Interestingly, participants' responses to demographic items indicating a long length of time in the US and "never married" status were similarly associated with intention to use condoms. It is plausible that the longer US-based Nigerians live in the US, they may be more likely to internalize the "safe sex" messages about condom use that are constantly communicated in print and social media.

The finding that younger participants in this study, that is, the never married group, tended to report an intention to use condoms may also reflect their adoption of safe sex messages and behaviors. Additional research is needed to validate these associations and understand them better. On the other hand, older age and "married status" were significantly associated with an individual's intention *not* to use condoms. Not surprisingly, there was a strong and positive correlation between age and "married" status in this study ($r = .685$, $p < .01$), indicating that older individuals in this sample were also married. This finding is consistent with Wang (2013) who reported that individuals in monogamous relationships do not typically use condoms unless for contraceptive purposes.

Condom Use Subjective Norms and Condom Use Intention

Subjective norms was defined as the motivation to comply with the prevailing subjective norms about condom usage. Findings from this study revealed that, on

average, participants were less inclined to conform to condom use subjective norms (M = 45, range = 3 to 147); that is, they were less inclined to conform to condom use norms that are valued by their peers, friends, and family. Intuitively, this finding would suggest that since the normative group was more traditional, participants were more likely to comply with the traditional Nigerian norm to *not* use condoms. On the other hand, majority of participants in the study were assimilated (74%) and integrated (76%) into the US culture and most participants had lived in the US for at least sixteen years. In fact, assimilation was positively associated with condom use subjective norm scores in this study ($r = .20$, $p < .05$).

The low mean subjective norm score in this study may represent condom use norms for married persons (i.e., no condom use) in that a majority of the sample (70%) were married; being married was inversely related to subjective norms for condom in this study. Thus, it is possible that the subjective norms for non-condom use may reflect the norms between married couples in the US. This is because married couples do not usually use condoms. These relationships merit further study.

Although the mean score for condom use subjective norm was on the lower end in this study, it was a significant and independent predictor of condom use intention in the theoretically expected direction. The independent effect of condom use subjective norms on condom use intention was moderate ($\beta = .27$, $p< .001$), and it contributed 7% additional variance in condom use intention above the 41% variance contributed by covariates. This independent relationship between condom use subjective norms and condom use intention is consistent with multiple studies in which subjective norms

predicted condom use intention (Asare & Sharma, 2010; Heeren et al., 2007, 2009; Liu et al., 2013; Peltzer & Oladimeji, 2004; Protogerou et al., 2013; & Wang, 2013).

It is plausible that this sample embraced US socio-cultural norms surrounding condom use, and they may have accepted the prevailing US subjective norms surrounding the intention for condom use. Because this sample was largely assimilated into US culture, there is a need to examine condom use subjective norms in samples of recent Nigerian immigrants who may be less assimilated. It will also be beneficial to explore this phenomenon using a sample that better represents single and never married US-based Nigerians. Lastly, a qualitative inquiry of condom use subjective norms in highly acculturated and assimilated US-based Nigerians would help with understanding if the prevailing subjective norms about condom use are based on the traditional Nigerian norms or the US culture.

Gender and Condom Use Intention

A hypothesis of this study was that gender was significantly related to condom use intention in that male gender would be less inclined to intend to use condoms. Findings from this study indicated that gender was not significantly related to condom use intention and the effect of gender on condom use intention was negligible ($r = -.014$, $p = .866$). This finding is consistent with a published report of university students in a US-Mexico border city (Lechuga & Wiebe, 2009) which indicated that gender was not significantly related to condom use intention. It is possible that males in this study rejected the traditional Nigerian socio-cultural norm regarding male gender and condom use because the participants in this study were largely assimilated and integrated into the US culture.

On the other hand, several studies have demonstrated that gender was a significant predictor of condom use intention among sub-groups such as (a) Korean college students (Cha et al., 2008), (b) multinational US-based participants (Mausbach et al., 2009), (c) University students from Spain and Portugal (Munoz-Silva et al., 2009), and (d) a mix of Black, Caucasian, and Hispanic undergraduates from a US university (Wang, 2013). The equivocal findings across studies regarding gender and condom use intention underscore the need to replicate this study in a sample of less acculturated US-based Nigerians to determine any gender effects. In addition, actual condom use behaviors among US-based Nigerians should be explored to determine the direct relationships between intention and behavior as theorized.

Acculturation and Condom Use Intention

Another theorized premise of this study was that US-based Nigerians' intention to use condoms could be influenced by their level of assimilation into US culture, norms, and customs (Essien, et al., 2010; Oyediran et al., 2010). Berry and colleagues (2012) postulate that the longer an individual stays in an environment, the greater is the degree of exposure to that culture. In turn, this exposure contributes to a person's decision to adapt or not adapt to the new culture. There was little variation in the level of acculturation in the study sample. A majority of the sample in this study (80%) lived in the US for 11 to greater than 20 years, and most of the participants were highly integrated and assimilated into the US culture. Only 37 participants (24%) were traditionalist in their acculturation strategy.

These descriptive findings are in contrast to findings in a study of Minnesota-based Nigerian immigrants (Akinde, 2013) where females were more traditional in their

acculturation strategy and were more separated from the US culture than males (9%). It is possible that assimilated female participants in the current study may have lived longer in the US than females in the Akinde study and may be employed outside of the home. Neither traditional nor assimilation acculturation strategies had any significant relationship with condom use intention in this study. This finding likely occurred because of the lack of variability in level of acculturation among study participants. Interestingly, this finding is consistent with findings from Robinson and colleagues' study (2005) that revealed acculturation was not a predictor of condom use among 163 African American women from Minneapolis and St. Paul, Minnesota, USA.

On the other hand, the lack of significant association between acculturation and condom use intention in this study differed from findings in several other studies that found significant associations between levels of acculturation to the US culture and condom use intention; that is, persons who are less acculturated to the US culture tend to report a reduced intention to use condoms (Hennessy-Burt et al., 2011; Hines et al., 1998; Lechuga & Wiebe, 2009; Rojas-Gujler et al., 2005; Thurman et al., 2009). These contradictory empirical findings point to the need for further exploration in future studies.

Multiple Sexual Partners Intention

Multiple sexual partner (MSP) intention was the second outcome in this study. Participants indicated that, on average, they did not intend to engage in sex with MSP (M = 4.84, range = 3 to 21). This is similar to findings from Asare and Sharma's (2010) study of US-based African immigrants in which subjects also did not intend to engage in sexual activities with multiple partners (M = 4.87, range = 3 to 21). Interestingly, the demographic characteristics of the study sample may provide one explanation for the low

mean level of multiple partner intention in this study. Seventy percent of respondents were married, and only 24% of participants reported they were never married. For the larger married group in the study sample, negative association was found between this group's marital status and their reports of multiple sexual partner intention (MSP); that is, married participants tended to report that they did not intend to engage in sex with multiple sexual partners. On the other hand, positive associations were found between several of the sample subgroups (i.e., never married or single respondents, students, those having a sexual preference for both genders) and the intention to engage in sexual activities with multiple sexual partners. Additionally, never married status remained significantly and independently associated with multiple sexual partner intentions in multivariate analysis ($\beta = .242$, $p < .01$). This finding was consistent with a recent report which revealed that being unmarried was a predictor of risky sexual behavior, including engaging in sex with multiple sexual partners, among a sample of African Americans in urban US neighborhoods (Davies et al., 2015). Notably, never married status was also significantly related to an intention *to use condoms* in the current study, indicating that even though single US-based Nigerians express an intention to engage in sex with MSP, they also express an intention to use condoms.

Clearly, more research is needed to: 1) gain a clearer understanding of the nature of these relationships; and 2) examine relationships between multiple sexual partner intentions and actual behavior in US-based Nigerians. Additionally, these findings suggest that interventions designed to reduce multiple sexual partner intentions should be tested and targeted to Nigerian immigrants who are younger in age, students, single, and those who prefer to engage in sex with both males and females. Moreover, although

sexual risk reduction was not explored in this current study, future studies designed to analyze the potential for sexual risk reduction when condoms are used with multiple sexual partners may be beneficial to understanding and planning RSB initiatives among US-based Nigerians.

Multiple Sexual Partners Subjective Norms and Multiple Sexual Partners Intention

Participants in this current study were, on average, less inclined to comply with multiple sexual partner (MSP) subjective norms (M = 9.49, range = 3 to 58). That is, participants did not intend to comply with prevailing multiple sexual partner (MSP) norms that were valued among their peer groups. This is similar to findings by Asare and Sharma (2010) who reported that US-based African participants in their study were not inclined to comply (M = – 6.17, range = 29 to 36) with the multiple sexual partnership norms that exists among individuals whose opinions they value.

It was hypothesized that multiple sexual partners (MSP) subjective norms would be significantly associated with MSP intention among US-based Nigerians. In bivariate analysis, MSP subjective norms was significantly associated with MSP intention (p = .235, $p < .01$) in the theoretically expected direction. However, it was not an independent predictor in multivariate analysis (β = .13, p = .086) when other independent variables and covariates were in the model, though the effect of MSP subjective norms on MSP intention was moderate and approached significance.

It is plausible that a lack of variability in MSP subjective norms scores may account for the absence of an independent predictor effect of MSP subjective norms in this study. In addition, a majority of the sample were married and highly acculturated and likely rejected the Nigerian norm to engage in sex with MSP. On the other hand, multiple

studies have indicated that higher levels of acculturation to the US culture was significant for increased engagement in sex with multiple sexual partners (Hennessy-Burt et al., 2011; Hines et al., 1998; Lechuga & Wiebe, 2009; Rojas-Gujler et al., 2005; Thurman et al., 2009). Thus, it is also possible that some of those who participated in this study may have acquired US subjective norms regarding MSP; that is, in the US, individuals may not necessarily marry multiple wives, but it is not unusual for some, especially single people, to have multiple sexual partners. Future research should focus on understanding the nature and differences in MSP subjective norms in a sample of US-based Nigerians with diversity in marital status and levels of acculturation.

Gender and Multiple Sexual Partners Intention

It was also theorized that gender, as a background factor, would be significantly associated with multiple sexual partner intentions among US-based Nigerians. Findings from this study indicated that male gender was significantly associated with the intention to engage in sexual activities with multiple sexual partners (MSP) in bivariate analysis but did not have a significant effect in multivariate analysis. No published study was located that explored relationships between gender and MSP intention. However, one study that examined relationships between gender and actual engagement with MSP in Zambian adults (Do & Meekers, 2009) revealed that males were significantly and almost seven times more likely than females to engage in sexual activities with MSP.

In another national household survey of nearly 12,000 South African youths, 30% of males compared to 9% of females reported that they engaged in sex with MSP. The findings from this study and previous research suggest that US-based Nigerian men, particularly those who are not married, may intend to engage in risky sexual behaviors

with multiple sexual partners. The extent to which their intentions are associated with actual behaviors merits further study. Since condom use may prevent the negative consequences of this risky sexual behavior, intervention research is also needed that tests strategies designed to foster safer sexual behaviors among US-based Nigerian males.

Acculturation and Multiple Sexual Partner Intention

A traditionalist acculturation strategy was not significantly related to multiple sexual partner intention (MSP) in this study as theorized. On the other hand, the assimilationist acculturation strategy was significantly associated with the intention *to* engage in sex with MSP. This finding was surprising since it was not in the theoretically expected direction and is in contrast to the study's premise that less acculturated US-based Nigerians would retain their traditional customs about multiple sexual partnerships and express an intent to engage in sex with MSP while the more acculturated participants would adopt a "safe sex" approach to sexual behavior and express an intent *not* to engage in sexual relationships with MSP. However, this surprising finding is consistent with other studies that revealed associations between higher levels of acculturation to the US culture and intentions to engage in sexual activities with MSP (Hennessy-Burt et al., 2011; Lechuga & Wiebe, 2009; Rojas-Gujler et al., 2005; Thurman et al., 2009).

It is plausible that participants who retained the Nigerian socio-cultural norms about multiple sexual partnerships may have perceived less sexual threat from their environment as they became assimilated into the US culture (McCoy et al., 2014). With this inaccurate perception of risk, they may have continued with or re-initiated the Nigerian socio-cultural norms that permit MSP (Adedimeji et al., 2007; Dibua, 2010; Ike & Aniebue, 2007; Izugbara, 2008; Smith, 2007). This perception of decreased sexual risk

by immigrants in an adopted country suggests the need for additional studies to explore the important relationships between acculturation and the desire to abide by a prevailing traditional culture that may be sexually risky among US-based Nigerians.

It is also plausible that many US-based Nigerian participants in this study could have become comfortable with their adopted environment and were no longer as conscious of the health risks associated with RSB as they did when they were new immigrants to the US (McCoy et al., 2014). This phenomenon, referred to as the immigrant paradox (Rudmin, 2003; Schwartz et al., 2014), occurs when being acculturated into a new culture could lead to participating in risky health behaviors. Thus, the relationship between assimilation acculturation and intention to engage in sex with multiple sexual partners (MSP) among immigrant Nigerians requires further exploration to clarify this relationship.

Mediating Role of Subjective Norms

A major premise of this study was the role of subjective norms as the mediator, or underlying mechanism, in the relationship between background factors (gender and acculturation) and both intentions examined (condom use intention and MSP intention). Subjective norms was not found to be a mediator in this relationship because background factors, subjective norms, and intentions were not interrelated as theorized, a necessary condition for subjective norms to serve as a mediator as hypothesized in this study.

This finding was not consistent with reports from past research that examined other background factors (e.g., infertility, physical activity, skin cancer, alcohol use) and demonstrated that subjective norms acted as a mediator between these factors and behavioral intentions (Ajzen & Klobas, 2013; Caperchione & Mummery, 2007; Hillhouse

et al., 2008; Jemmott et al., 2015; Zemore, 2005). Further research is indicated to explore other background factors (e.g., length of stay in the US, marital status) and potential mediators (attitudes, perceived behavioral control) and intentions in US-based Nigerians.

Utility of the Theory of Planned Behavior for Examining Risky Sexual Behavior Intentions among US-Based Nigerians

Findings from this study supported the theorized relationships between the direct antecedents of intentions, subjective norms for condom use and multiple sexual partners (MSP), and intentions to engage in these risky sexual behaviors in bivariate analyses. In addition, theory-based covariates, attitudes and perceived behavioral control, were also significantly related to intention as theorized. Moreover, subjective norms about condom use was an independent predictor of condom use intention and contributed 7% of the variance in this outcome above the variance contributed by covariates. Lastly, while not an independent predictor of multiple sexual partners' intention, subjective norms for multiple sexual partners (MSP) had a moderate effect on this outcome and approached significance. These findings indicated that the TPB propositions that asserted direct relationships between subjective norms and intentions were empirically adequate.

The theorized relationships of background factors as direct antecedents to subjective norms and indirect antecedents to intention is less clear based on study findings since all theorized interrelationship among background factors examined in this study, subjective norms, and intention were not supported. Further studies that test these theorized interrelationships are warranted to further evaluate the utility of the TPB for explaining the complex interrelationships among TPB constructs. Importantly, this study, guided by the TPB, revealed important study sample cultural subgroup differences in

levels of acculturation, subjective norms, risky sexual behavior intentions that underscore the premise that Blacks are not a monolithic group. These differences indicate that interventions targeted at US-based Nigerian subgroups may contribute to the prevention of risky sexual behaviors within this population.

Chapter 6

Summary, Conclusions, Limitations, Implications, and Recommendations

Summary

In this study, the Theory of Planned Behavior (Ajzen, 1985, 2012) and the acculturation framework (Berry, 1997; Berry et al., 2012) were utilized to explore and analyze the hypothesized relationships between risky sexual behavior (RSB), gender, and acculturation among US-based Nigerians. RSB is defined as unsafe sexual practices such as inconsistent or lack of condom use during sexual intercourse and engagement in sexual activities with serial or concurrent multiple sexual partners (CDC, 2013b). The specific Theory of Planned Behavior (TPB) constructs explored in this study were condom use and multiple sexual partner (MSP) intentions as dependent variables, subjective norms as the independent variable, while attitudes and perceived behavioral control (PBC) were co-variates. In addition, acculturation and gender were explored as background factors (Ajzen & Klobas, 2013).

Ajzen (1985, 2012) proposed that intention is the immediate antecedent of behaviors such as RSB. Therefore, the intention to engage in RSB is an indication of an individual's inclination to engage or not engage in RSB. The TPB also explicated that subjective norms is the perceived social pressure by those who are important in an individual’s life (important referents) and whose opinions may influence the person to

engage or not engage in RSB. The relationship between RSB intention and subjective norms is that subjective norms influence RSB through intentions to engage or not engage in RSB (Ajzen, 1985, 2012).

The TPB constructs used in this study as co-variates were also theoretically important because Ajzen (1985, 2012) proposed that, in addition to subjective norms, attitudes, and perceived behavioral control (PBC) are also antecedents to intention. Attitude toward risky sexual behavior (RSB) is the degree to which participating in RSB is positively or negatively valued. Therefore, attitudes towards RSB are direct determinants of RSB intention. In turn, intention is the immediate antecedent to RSB (Ajzen, 1985, 2012). PBC refers to an individual's perceptions of his or her capability to engage or not engage in RSB. Ultimately, RSB prevention is determined by the interaction of intention and an adequate degree of behavioral control against RSB. Therefore, PBC directly influences an intention for or against RSB (Ajzen, 1985, 2012).

Ajzen and Klobas (2013) linked intention to background factors such as gender and acculturation that were explored in this study. Acculturation refers to the process of embracing new behaviors and cultural practices of an adopted or host environment. These adopted behaviors and practices are essential for integrating into another culture (Hennessy-Burt et al., 2011). Background factors are presumed to influence intention through their effects on subjective norms, attitudes, and PBC. This implies that the TPB constructs could be the underlying mechanism or the mediator through which gender and acculturation influence RSB intention.

The following hypotheses were examined in a sample of US-based Nigerians ages 18 through 69 years who were recruited from five Nigerian community Listservs:

1. RSB subjective norms are significantly related to lack of condom use intention.
2. RSB subjective norms are significantly related to multiple sexual partners intention.
3. Gender is significantly related to lack of condom use intention.
4. Gender is significantly related to multiple sexual partner intention.
5. Acculturation is significantly related to lack of condom use intention.
6. Acculturation is significantly related to multiple sexual partner intention.
7. Gender is significantly related to subjective norms
8. Acculturation is significantly related to subjective norms.
9. When attitudes and perceived behavioral control (PBC) about condom use and multiple sexual partners are controlled for, gender, level of acculturation, and subjective norms would be independently related to condom use intention.
10. When attitudes and PBC about condom use and multiple sexual partners are controlled for, gender, level of acculturation, and subjective norms would be independently related to multiple sexual partner intention.
11. When subjective norms about risky sexual behavior (RSB) is controlled for, the magnitude and significance of the relationship between gender and condom use intention will diminish.
12. When subjective norms about RSB is controlled for, the magnitude and significance of the relationship between gender and multiple sexual partners intention will diminish.
13. When subjective norms about RSB is controlled for, the magnitude and significance of the relationship between acculturation and condom use intention

will diminish.

14. When subjective norms about RSB is controlled for, the magnitude and significance of the relationship between acculturation and multiple sexual partner intention will diminish.

The sample consisted of 154 US-based Nigerian men and women who met the following inclusion criteria: (a) self-identification as US-based Nigerians, (b) understood, spoke and wrote English, and (c) must be at least 18 years old. The mean age of the sample was 42.31 (SD=13.75) ranging from 18 through 69 years. The majority of participants were female (59.2%) and were born in Nigeria (78.3%). Most (65%) had lived in the US for over 16 years, while few (10.4%) had lived in the US for only five years or less. Most participants were married (69.7%), and had graduate level (52.9%) education (M= 16.42) ranging from six to 20 years. Most (53.6%) worked in a health related profession, while 17.2% of the participants were students. Most were Christians (90.7%), lived in the North East region of the US (64.8%), and originated from the South West region of Nigeria. Data was collected using on-line self-reported surveys. Initial contact and follow-up with participants was in accordance with a modified Tailored Design Method (TDM) for repeated email contacts (Dillman, et al., 2009, Dillman, Smyth, & Christian, 2014).

The following instruments were used for data collection: A demographic questionnaire developed by the principal investigator (PI) for this study was utilized to gather data about participants' age, gender, country of birth, US state of residency, length of stay in the US, marital status, educational level, occupation, religion, and their Nigerian state of ancestral origin. Asare and Sharma's (2010), Health and Safer Sex

Behavior Survey (HSSBS) measured condom use and multiple sexual partners within the context of theory based constructs of: (a) intention, (b) subjective norms (c) attitudes, and (d) perceived behavioral control (PBC). Obasi and Leong's (2010) Measurement of Acculturation Strategies for People of African Descent survey (MASPAD) was utilized to measure traditional and assimilation acculturation strategies.

Using computer generated unique identifiers, data was collected online and analyzed with SPSS version 22 for Windows (SPSS, 2014). Descriptive analysis of the demographic data was conducted for sample characteristics. Correlations or interrelationships between study variables were analyzed using Pearson Product Moment Correlation. Multiple regression was used to analyze trends and predictions among variables. Two-tailed tests of significance, set at the .05 level, was used to test hypothesized relationships between condom use and multiple sexual partner intentions, subjective norms, acculturation, and gender. Hypotheses one through eight were tested using Pearson Product Moment Correlation. Linear regression was utilized to test hypotheses nine through ten.

Hypothesis 1, which proposed that subjective norms about risky sexual behavior (RSB) would be significantly related to condom use intention, was supported because there was a significant relationship between subjective norms and condom use intention.

Hypothesis 2, which assumed that subjective norms about RSB would be significantly related to multiple sexual partner intention, was also supported because there was a significant correlation between subjective norms and multiple sexual partner intention.

Hypothesis 3 proposed that gender would be significantly related to condom use

intention. This hypothesis was not supported because gender was not significantly related to condom use intention.

Hypothesis 4, which indicated that gender would be significantly related to multiple sexual partner intention, was supported because male gender was significantly related to multiple sexual partners intention.

Hypothesis 5, which proposed that acculturation would be significantly related to condom use intention, was not supported because both traditional and assimilation acculturation were not significantly related to condom use intention.

Hypothesis 6, which indicated that acculturation would be significantly related to multiple sexual partner intention, was partially supported. Although, traditional acculturation was not significantly related to multiple sexual partner intention, assimilation acculturation was significantly related to multiple sexual partner intention. That is, those who were assimilated into the US culture intended to have sex with multiple sexual partners.

Although hypothesis 7 proposed that gender would be significantly related to subjective norms, this was not supported because both subjective norms for condom use and multiple sexual partners were not correlated with gender.

Hypothesis 8 indicated that acculturation would be significantly related to condom use subjective norms. Although findings revealed that traditional acculturation was not correlated with condom use subjective norms, assimilation acculturation was significantly and positively related to condom use subjective norms. Hypothesis 8 also stipulated that acculturation would be significantly related to multiple sexual partner subjective norms. Findings indicated that both traditional and assimilation acculturation were not related to

subject norms for multiple sexual partner. Thus, hypothesis 8 was partially supported.

Hypothesis 9 proposed that, when attitudes and perceived behavioral control (PBC) about condom use and multiple sexual partners (MSP) were controlled for, gender, level of acculturation, and subjective norms would be independently related to condom use intention. Hypothesis 9 was partially supported because attitudes and PBC about condom use were significantly and positively related to condom use intention. However, both acculturation dimensions and gender were not related to condom use intention. There were also significant and independent effects for three covariates. That is, perceived behavioral control (PBC) about condom use, attitudes about condom use, and length of time in the US were independent predictors of condom use intention when the effects of other covariates in the model were controlled.

Hypothesis 10 indicated that when attitudes and PBC about condom use and multiple sexual partner were controlled for, gender, level of acculturation, and subjective norms would be independently related to multiple sexual partner intention. This hypothesis was partially supported because subjective norms about multiple sexual partner, assimilation acculturation, and male gender were significantly related to multiple sexual partner intentions. In addition, while PBC was significantly related to multiple sexual partner intention, attitude was not significantly related to multiple sexual partner intention. Hypotheses 11 to 14 were not tested because the conditions for mediation were not met.

In this sample, subjective norms and other Theory of Planned Behavior (TPB) constructs were significantly related to condom use and multiple sexual partner intentions. Conversely, the relationships between gender, acculturation (background

factors), subjective norms, and intention were either partly supported, not supported, or did not meet mediation-testing criteria.

Limitations

The cross-sectional, non-experimental design of this study limits its ability to predict causal relationships between independent and dependent variables. This is because in statistical analysis, correlation does not prove causation. In addition, the use of a convenience sample of on-line participants of Nigerians listed on five tribal leaders Listserv limits the generalizability of study findings to all US-based Nigerians. Generalizability of findings was further curtailed because participants were mostly female, mostly married, mostly educated, and had lived longer than 16 years in the US.

Some survey responses were invalid due to missing data that seemed systematic. Those participants who did not complete the survey cannot be compared to other participants because they did not answer the demographic section of the survey. In addition, responses were self-reported and subjective, and therefore, may have been influenced by recall bias.

Although 13 out of 16 study instruments demonstrated acceptable internal consistencies (Nunnally & Bernstein, 1994), the condom use perceived behavioral control (PBC) scale ($\alpha = .499$) and assimilation acculturation subscale ($\alpha = .593$) demonstrated moderate internal consistencies. The reliability coefficient for multiple sexual partner PBC scale ($\alpha = .360$) was low and consistent with the reliability for this scale in previous research by the instrument developer among a US-based African sample (Asare & Sharma, 2010).

Ajzen (Ajzen, 1985; 2012) explicated that subjective norms is related to the

perceived behavioral expectations from an individual or a group's important referents such as friends, parents or partner. Thus one of the assumptions of this study was that US-based Nigerians would serve as important referents for other US-based Nigerians. It was equally expected that the subjective norms of these group would reflect traditional Nigerian norms. However, this sample was heavily skewed towards highly acculturated Nigerians who have lived in the US for a very long time. Thus, it is highly probable that participants in this study may be following social norms that are reflective of US norms rather than Nigerian norms. Since, the culture of 'hooking up', sexting, and having 'anonymous' sexual encounters is prevalent in this US, assimilated respondents may have taken on the US culture that supports multiple sexual partners (MSP). Future studies should be designed for younger or unmarried US-based Nigerians because findings from this study support the US culture of MSP among younger unmarried US-based Nigerians and students.

Findings from this study indicated that those who were married did not intend to use condoms or to have sex with multiple sexual partners. On the other hand, findings also indicated that single persons and students intended to use condoms and also intended to have multiple sexual partners. Future studies should further compare these relationships in partnered and single Nigerians.

Finally, using an on-line format might have contributed to some skewed findings in this study. Some people may not be comfortable with web survey because they generally do not trust the web. Therefore, although potential respondents received the e-mail from their community or tribal leaders, they may still not open the e-mail because they do not trust the stranger who originated the e-mail. Additionally, although

anonymity was assured, those immigrants who may not be legal US residents may not have responded to the survey because of concerns that their information may be stored and provided to the government or some other organization to be used negatively against them. Some individuals may not even have the opportunity to participate in this on-line survey because some people do not have e-mail addresses and some may not be computer literate. Those who are from the lower social economic class may have computers that are not up-to-date and thus, may not operate well due to outdated software (Dillman, et al., 2009, Dillman, Smyth, & Christian, 2014).

Conclusions

As theorized, findings support the assumption that subjective norms about risky sexual behavior (RSB) were significantly related to condom use and multiple sexual partner (MSP) intentions. In addition, subjective norms was an independent predictor of condom use intention. The theorized assumptions that background factors would be significantly related to RSB intention was supported because being male was significantly related to multiple sexual partner intention.

Some theorized relationships were partially supported. Within the acculturation framework, traditional acculturation was not significantly related to MSP intention, but assimilation acculturation was significantly related to MSP intention. Likewise, though, traditional acculturation was not correlated with condom use subjective norms, assimilation acculturation was significantly related to condom use subjective norms.

Some assumptions were not supported. Gender was not significantly related to condom use intention, subjective norms for condom use and subjective norms for multiple sexual partners (MSP). The proposal that acculturation would be significantly

related to condom use intention was not supported because both acculturation dimensions were not significantly related to condom use intention. Further, the suggestion that acculturation would be significantly related to MSP subjective norms was not supported because both traditional and assimilation acculturation were not related to subjective norms for MSP. In addition, the proposal that condom use and multiple sexual partner subjective norms will mediate the relationship between background factors (gender and acculturation) and their respective intentions was not supported because the conditions for mediation were not met.

Findings about attitudes and PBC as co-variates indicated partial support for some theorized relationships. Condom use attitudes and perceived behavioral control about condom use were significantly related to condom use intention. In addition, PBC about condom use, attitudes about condom use, and length of time in the US were independent predictors of condom use intention when the effects of other covariates in the model were controlled. Although PBC was significantly related to multiple sexual partner (MSP) intention, attitude was not significantly related to MSP intention. Assimilation acculturation was the only independent predictor of MSP intention when the effects of all other covariates and main study variables were in the model.

Implications for Clinical Practice

The empirical literature indicates that there are cultural differences among blacks. Consequently, all blacks should not be considered as a monolithic whole (Asare and Sharma, 2010). Specifically, the single and younger Nigerian immigrants who participated in this study reported an intention to have sex with multiple sexual partners. This finding opens up the opportunity to build an educational agenda and program in this

sub-group in particular. Those who hold on to Nigerian subjective norms that permit multiple sexual partnerships should be provided with targeted culturally pertinent RSB prevention health education. As this is a male dominated culture, this initiative should be presented in an acceptable and gender non-threatening format.

On a positive note, some participants from this study indicated the intention for condom use. This should be encouraged, applauded, and promoted within this community as a positive culture of health initiative. This is crucial because unprotected sex results in negative health outcomes for individuals in the US. It also results in the global economic burden of daily caring for sexually transmitted infections (STI), HIV, and unplanned pregnancies (CDC, 2010, 2012, 2013a). Findings from this study should serve as a strong foundation for providing appropriate clinical care such as ensuring that free condoms are readily available in health care facilities utilized by members of this community.

To prevent or decrease the magnitude of RSB sequelae, nurse scientists and clinicians must bridge the gap between condom use intention and actual condom use. This calls for translational and interventional research designs that will support RSB prevention thorough attractive and non-judgmental condom use programs. To achieve such an initiative, there is a need to explore if condom use intention in this population is for preventing sexually transmitted infections (STI), for preventing unintended pregnancies or as a prevention mechanism for both. Available resources should be targeted at the facet of condom use that can be improved or enhanced.

In this study, subjective norms as a theoretical construct (Ajzen, 1985, 2012) did not mediate between the background factors of gender, acculturation, intention for condom use and intention for MSP (Ajzen & Klobas, 2013; Berry, 1997; Berry et al.,

2012). Therefore, there is a need to explore the possibilities of other TPB constructs mediating between gender, acculturation or other background factors such as marital status, education, and risky sexual behavior (RSB) intentions.

Some participants from this study indicated intentions for engaging in sexual activities with MSP. Therefore, future research should explore the role that nurses can play in initiating a culture of health within this community. One goal of this initiative would be an exploration of the possibility that integrating and mixing of cultural values in a host country could possibly lead to some yet unexplored variations of social factors that may serve as a platform for RSB health determinants within this community.

Recommendations for Future Research

Based on findings of this study, the following recommendations for future research are proposed:

1. Study replication in varied settings. Only on-line US-based Nigerian communities participated in this study. To increase the generalizability of study findings, non-web based Nigerian communities in the US should be sampled.

2. Study replication with a change in sample composition. The theorized relationships for this study should be further explored among newly emigrated members of the US-based Nigerian community. Most participants in this study who had lived in the US for longer than 16 years had learned to straddle two cultures. Some of them have embraced and adopted the US condom use subjective norms while others are still influenced by the Nigerian MSP subjective norms. In addition, although, findings from this study indicated that students were more likely to indicate an intention to engage in sex with MSP, they were in the minority (17.2%). Therefore, future studies should

stratify sampling to include adequate representation of recent immigrants (up to five years in the US) and students.

3. Condom use comparison studies. This study did not explore the rationale for condom use intention among those students that intended to use condoms. In order to provide appropriate clinical care that will promote a RSB prevention culture of health for this population, future research can partner with various health centers to design studies that would explore and provide answers to the question-are condoms used for sexually transmitted infection (STI) prevention or as a contraceptive method within this community. This would be a feasible initiative to encourage consistent condom use as a viable option for risky sexual behavior (RSB) prevention.

4. Translational / Interventional studies. Some participants still abide by the Nigerian socio-cultural norms that permit males to have MSP (Essien, et al., 2010; Izugbara, 2008; Owoaje & Uchendu, 2009; Oyediran et al., 2010; Udoh et al., 2009). A translational study initiative to promote a culture of health that is focused on preventing engagement in sexual activities with concurrent or serial multiple sexual partners (MSP) will be beneficial to understanding this phenomenon among US-based Nigerians. In addition, interventional research initiatives are indicated to ensure that this community is aware of and can access preventative mechanisms for preventing risky sexual behavior.

5. Qualitative studies. Perceived Behavioral Control (PBC) for condom use, the PBC for multiple sexual partner scales, and the assimilation subscale of the acculturation instrument did not demonstrated acceptable internal consistencies (Nunnally & Bernstein, 1994). Qualitative studies within this population are indicated in order to develop instrument that will capture culturally appropriate languages, phrases, and expressions for

measuring these important variables. There is also a need for an inductive approach to determine what the RSB subjective norms are for highly integrated US-based Nigerians. Results from such studies will aid in the development and testing of culturally appropriate health care interventions for this population.

6. Re-examination of the theorized relationship of subjective norms as a mediator. Empirical literature supported the assumption that subjective norms serves as a mediator between background factors and intention (Ajzen & Klobas, 2013). Future studies should be designed to explore other background factors such as age, marital status, occupation, religion and social economic factors. Another option is to utilize other TPB constructs as mediating variables between background factors and intention.

7. Mixed-Mode Data Collection Methodologies. The web-based data collection method utilized for this study did not capture all possible sub-sets of US based Nigerians. Future studies should consider utilizing different recruitment methodologies that will be accessible to a wider audience. This method(s) should ensure that sensitivity, discretion, and confidentiality that are crucial to collecting data about risky sexual behavior are maintained.

In summary, above recommendations would facilitate the observation of differences among those cultural groups bunched together into a monolithic group. Meaningful targeted interventions for the “never married” and less acculturated US-based Nigerians will contribute to the prevention of risky sexual behaviors (RSB) within this integrated immigrant population. In addition, findings will facilitate better understanding, planning, and execution of acculturation or immigrant related RSB prevention interventions among this population. According to Wang et al. (2013), migrating to another country is

significantly related to engaging in RSB. Therefore, risky sexual behavior preventative initiatives are very crucial in this immigrant community.

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NIGERIAN ASSOCIATION IN THE TRAID

P.O. BOX 2456, GREENSBORO, N.C. 27402

December 11, 2014

To Whom It May Concern

This is to confirm that Olatubosun Aloba, a PhD student at Rutgers, the State University of New Jersey is permitted to conduct her study via electronic survey among members of the Nigerian Association in the Triad. I am willing to post the link for her study on our list-serve. If you have any question, please contact me at okoyeokafor@yahoo.com

Sincerely,

Mr. Don Okafor,
President-Nigerian Association in the Triad (NAT).

-----Original Message-----
From: lolaadn2002 <lolaadn2002@yahoo.com>
To: Olatubosun Aloba <carlige@aol.com>
Sent: Thu, Dec 11, 2014 6:07 am
Subject: Re: Permission letter needed for Ola's Research

To Whom It May Concern
My name is Titilola Turton, a member of the Nigerian community in Chicago land. This to inform you that Olatubosun Aloba, a PhD student from Rutgers University has permission to conduct her research among members of our community. Our Nigerian community is made up of Nigerians with diverse professional make-up from all over the United States. She has informed me that her study will be anonymous so that our members' confidentiality will be protected. I am also aware that the study will be conducted on-line via our list-serve. To that end, I am willing to post the link to her study on our list-serve. I may be contacted at lolaadn2002@yahoo.com if needed.

Sincerely,
Mrs. Titilola Turton,
Nigerian community in Chicago land 7089556903

-----Original Message-----
From: secretary <secretary@ncafay.org>
To: Olatubosun Aloba <carlige@aol.com>
Sent: Sat, Dec 13, 2014 3:50 pm
Subject: RE: Ola Aloba's on-line survey via List-Serve

To Whom It May Concern

Mrs. Olatubosun Aloba, a PhD student from Rutgers, the State University of New Jersey has permission to conduct her on-line research using the list-serve of US-based members of the Nigeria Cultural Association. I understand that this study is required for her dissertation and that it is an anonymous survey. I will post the link for her study on our list-serve so that any member who chooses to participate can privately access the study link. Please feel free to contact me at info@ncafay.org with any inquiry. Thank you.

Regards,
Dr. Anozie Nebolisa
Director of Socials/Pub. Sec.
Nigeria Cultural Association
Fayetteville NC 28303
Email: info@ncafay.org
Website: ncafay.org

-----Original Message-----
From: dansalami <dansalami@aol.com>
To: carlige <carlige@aol.com>
Sent: Fri, Dec 12, 2014 3:44 pm

To Whom It May Concern

Mrs. Olatubosun Aloba, a PhD student from Rutgers, the State University of New Jersey has permission to conduct her on-line research using the list-serve of Nigerians in our United States community. I understand that this study is required for her dissertation and that it is an anonymous survey. I will post the link for her study on our list-serve so that any member who chooses to participate can privately access the study link. Please feel free to contact me at dansalami@aol.com with any inquiry. Thank you.

Regards,
Mr. Yinka DanSalami
Chairman
Nigerian Independence Day Parade Committee
dansalami@aol.com
New York, NY.

Appendix E

ODUDUWA UNITY CLUB
P.O Box 20974
Greensboro, NC 27420

December 16, 2014

To Whom It May Concern:

This is to confirm that Olatubosun Aloba, a PhD student at Rutgers University, New Jersey is permitted to conduct her electronic survey among members of our Nigerian community in Greensboro, North Carolina and the surrounding areas. I understand that this study is anonymous and that it is required for her thesis. I will post the link for her study on our association list-serve so that members can access the study at their convenience.

On behalf of the Oduduwa Unity Club, I congratulate you for your academic success. If you need any additional assistance from our organization, do not hesitate to contact me at show255@yahoo.com.

Best wishes,

Prof. Musibau A. Shofoluwe
Secretary
Oduduwa Unity Club,
Greensboro, NC.

HEALTH AND SAFER SEX BEHAVIOR SURVEY

Consent and Directions: This survey is voluntary. You may choose not to participate without any consequences. We hope you choose to answer all questions of this research study. However, you may skip any questions you do not want to answer. There is no direct benefit of this survey to you. The results of this survey may be used to help guide and develop programs to improve the health of the Nigerian community in the US.

Your responses will be kept strictly anonymous. Your participation in this survey implies your consent.

Section 1

Definitions: For the purpose of this study, ***sexual intercourse*** is defined **as *vaginal or anal penetration by a penis.***

Questions #1 to #3 measure your ***Intention to use a condom*** anytime you engage in sexual intercourse.

Please circle one that reflects your *Intention* toward condom use	**Extremely Unlikely**						**Extremely Unlikely**
1. I intend to use a condom every time I engage in sexual intercourse	1	2	3	4	5	6	7

Please circle one that reflects your *Intention* toward condom use	**Definitely False**						**Definitely True**
2. I will try to use a condom every time I engage in sexual intercourse	1	2	3	4	5	6	7

Please circle one that reflects your *Intention* toward condom use	**Strongly Disagree**						**Strongly Agrees**
3. I plan to use a condom every time I engage in sexual intercourse	1	2	3	4	5	6	7

Questions #4 to #6 measure your ***Attitude toward condom use.***

Please circle each of the following that reflect your ***Behavioral Beliefs about condom use.***

If I use a condom every time I engage in sexual intercourse…	**Strongly Disagree**						**Strongly Agree**
4. I will protect myself against HIV/AIDS	1	2	3	4	5	6	7
5. I will prevent unwanted pregnancies	1	2	3	4	5	6	7
6. I will feel safe from contracting sexually transmitted diseases (STD)	1	2	3	4	5	6	7

Questions #7 to #9 measure ***Outcome Evaluation*** about your ***Attitude toward condom use.***

Please circle each of the following that describe you.

During sexual intercourse the use of a condom …	**Extremely Unimportant**						**Extremely Important**
7. to protect myself against HIV/AIDS is… to me	-3	-2	-1	0	+1	+2	+3
8. to prevent unwanted pregnancies is … to me.	-3	-2	-1	0	+1	+2	+3
9. to prevent sexually transmitted diseases (STD) is … to me	-3	-2	-1	0	+1	+2	+3

Questions # 10 to #12 measure ***Subjective Norms about condom use***.

Please circle each of the following ***Normative Beliefs about condom use*** that describe you**.**

	Strongly Disagree						**Strongly Agree**
10. My friends encourage me to use condoms whenever I have sexual intercourse.	1	2	3	4	5	6	7
11. My family encourages me to use condoms whenever I have sexual intercourse.	1	2	3	4	5	6	7
12. My partner encourages me to use a condom whenever we have sexual intercourse.	1	2	3	4	5	6	7

Questions #13 to #15 measure your ***Motivation to Comply*** with ***subjective norms about condom use.***

Please circle each of the following that describe you.

	Not at all Important						**Very much Important**
13. It is important that my friends approve of my condom use.	-3	-2	-1	0	+1	+2	+3
14. It is important that my family approve of my condom use.	-3	-2	-1	0	+1	+2	+3
15. It is important that my sexual partner(s) approve of my condom use	-3	-2	-1	0	+1	+2	+3

Questions #16 to #18 measure your ***Perceived Behavior Control about condom use.***

Please circle each of the following that describe your **Control Beliefs about condom use.**

	Strongly Disagree						**Strongly Agree**
16. It is difficult for me to use a condom every time I engage in sexual intercourse	1	2	3	4	5	6	7
17. I am confident that I can use a condom during sexual intercourse	1	2	3	4	5	6	7
18. The decision to use a condom during sexual intercourse is beyond my control	1	2	3	4	5	6	7

Questions #19 to #21 measure your *Perceived Behavior Control about condom use.*

Please circle each of the following that reflect your *Influence on Control Beliefs about condom use*.

	Less Likely						**More Likely**
19. If it is difficult for me to use a condom every time I engage in sexual intercourse, I will … use it	-3	-2	-1	0	+1	+2	+3
20. If I am confident that I can use a condom during sexual intercourse, I will … use it.	-3	-2	-1	0	+1	+2	+3
21. If the decision to use condom during sexual intercourse is beyond my control, I will … use it	-3	-2	-1	0	+1	+2	+3

Section 2

Definitions: For the purpose of this study, "***multiple sexual partners"*** is defined as having ***sexual intercourse with more than one partner***.

Questions # 22 to #24 measure your ***Intention about Multiple Sexual Partners***.

Please circle each of the following that describe you.

Please circle one that reflects your *Intention* toward multiple sexual partners	**Extremely Unlikely**						**Extremely Likely**
22. I intend to have sex with more than one partner in the next three months.	1	2	3	4	5	6	7

Please circle one that reflects your *Intention* toward multiple sexual Partners	**Definitely False**						**Definitely True**
23. I will try to have sex with more than one partner in the next three months.	1	2	3	4	5	6	7

Please circle one that reflects your *Intention* toward multiple sexual partners	**Strongly Disagree**						**Strongly Agree**
24. I plan to have sex with more than one partner in the next three months.	1	2	3	4	5	6	7

Questions #25 to #27 measure your ***Attitude toward multiple sexual partners.***

Please circle each of the following ***Behavioral Belief about multiple sexual partners.***

If I engage in sexual intercourse with multiple	**Strongly Disagree**						**Strongly Agree**
25. I am more likely to be infected with HIV/AIDS	1	2	3	4	5	6	7
26. I am more likely to have unwanted Pregnancies	1	2	3	4	5	6	7
27. I am more likely to be infected with sexually transmitted diseases (STD)	1	2	3	4	5	6	7

Questions #28 to #30 measure ***Outcome Evaluation*** about your ***Attitude toward multiple sexual partners***.

Please circle each of the following that describe you.

Having sexual intercourse with a single partner …	**Extremely Unimportant**						**Extremely Important**
28. to protect myself against HIV/AIDS is … to me	-3	-2	-1	0	+1	+2	+3
29. to prevent unwanted pregnancies Is … to me.	-3	-2	-1	0	+1	+2	+3
30. to prevent sexually transmitted diseases (STD) is … to me	-3	-2	-1	0	+1	+2	+3

Questions # 31 to #33 measure ***Subjective Norms about Multiple Sexual Partners***.

Please circle each of the following ***Normative Beliefs about Multiple Sexual Partners*** that describe you.

	Strongly Disagree						**Strongly Agree**
31. My friends encourage me to have sex with multiple partners (more than one sexual partner)	1	2	3	4	5	6	7
32. My family encourages me to have sexual intercourse with multiple partners (more than one partner)	1	2	3	4	5	6	7
33. My partner encourages me to have sex with multiple partners (more than one partner)	1	2	3	4	5	6	7

Questions # 34 to # 36 measure your ***Motivation to Comply*** with ***subjective norms about multiple sexual partners***. Please circle each of the following that describe you.

	Not at all Important						**Very much Important**
34. How important is friends' approval of having sex with multiple partners to me.	-3	-2	-1	0	+1	+2	+3
35. How important is family's approval of having sex with multiple partners to you?	-3	-2	-1	0	+1	+2	+3
36. How important is your sexual partner's approval of having sex with multiple partners to you?	-3	-2	-1	0	+1	+2	+3

Questions #37 to 39 *measure your* ***Perceived Behavior Control about multiple sexual partners***.

Please circle each of the following that reflect your ***Control Beliefs about multiple sexual partners.***

	Strongly Disagree						**Strongly Agree**
37. I have control over my decision to have sex with more than one sexual partner.	1	2	3	4	5	6	7
38. I am confident that I can have sex with more than one partner, if I wish.	1	2	3	4	5	6	7
39. The decision to have sex with more than one partner is beyond my control	1	2	3	4	5	6	7

Questions #40 to 42 *measure your* ***Perceived Behavior Control*** about ***multiple sexual partners***.

Please circle each of the following that reflect your ***Influence on Control Beliefs*** about ***multiple sexual partners.***

	Less Likely						**More Likely**
40. If I can control my decision to have sex with more than one partner, I will …. do it	-3	-2	-1	0	+1	+2	+3
41. If I am confident that I can have sex with more than one partner, I will ….do it	-3	-2	-1	0	+1	+2	+3
42. If the decision to have sex with more than one partner is beyond my control, I will … do it	-3	-2	-1	0	+1	+2	+3

Directions: Answer each question as honestly as you possibly can by identifying the response that best reflects your agreement/disagreement to each item ["Strongly Disagree" (1), "Disagree" (2), "Slightly Disagree" (3), "Slightly Agree" (4), "Agree" (5), "Strongly Agree" (6)]. There are no right or wrong answers.

Provide only one response to each item.

What is your ethnicity? _____

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1. I take a great deal of pride in being a person of African ancestry (African, African American, Black Cuban, Black Brazilian, Trinidadian, Jamaican, etc.)……	1	2	3	4	5	6
2. If I have children, I will give them an African naming ceremony……	1	2	3	4	5	6
3. I do not feel connected to my African heritage ……	1	2	3	4	5	6
4. If I have children, I will raise them to be American first and a person of African ancestry second……	1	2	3	4	5	6
5. I was raised to maintain cultural practices that are consistent with people of African descent……	1	2	3	4	5	6
6. I have difficulty accepting ideas held by the Black community……	1	2	3	4	5	6
7. I tend to generate friendships with people from different racial and cultural backgrounds……	1	2	3	4	5	6
8. I was socialized to treat my elders with respect……	1	2	3	4	5	6
9. Everyone has an equal opportunity to be financially successful in this country……	1	2	3	4	5	6
10. I am comfortable putting on the mask in order to fit in……	1	2	3	4	5	6
11. Despite facing potential discrimination, it is important for me to maintain my cultural beliefs……	1	2	3	4	5	6
12. I behave in ways that are consistent with people of African ancestry even if other cultural groups do not accept it……	1	2	3	4	5	6
13. The way that I behave in public (work, school, etc.) is different than how I behave at home..……	1	2	3	4	5	6
14. I consider myself to be a spiritual person.……	1	2	3	4	5	6
15. I do not take things from the Earth without giving back to it ……..……	1	2	3	4	5	6
16. I consider myself to be a religious (Christian, Catholic, Muslim, etc.) person.……	1	2	3	4	5	6
17. It is vital for me to be actively involved in the Black community…..……	1	2	3	4	5	6
18. The word "communalistic" describes how I interact with other people……	1	2	3	4	5	6
19. I prefer to be around people that are not Black.……	1	2	3	4	5	6
20. I participate in many social events where few Blacks are in attendance…..	1	2	3	4	5	6
21. I actively support Black owned businesses……..…...	1	2	3	4	5	6
22. People should modify many of their values to fit those of their surroundings……	1	2	3	4	5	6
23. I express different cultural values in order to fit in.……	1	2	3	4	5	6
24. I was socialized to support Black owned businesses...……..	1	2	3	4	5	6

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
25. My beliefs are largely shaped by my religion (Christianity, Catholicism, Islam, etc.)……	1	2	3	4	5	6
26. Most of my closest friends and past romantic partners are from a variety of different cultural groups..…….	1	2	3	4	5	6
27. I prefer entertainment (movies, music, plays, etc.) that highlights Black talent……..…….. .	1	2	3	4	5	6
28. I buy products that are made by people of African ancestry (African, African American, Black Cuban, Black Brazilian, Trinidadian, Jamaican, etc.)… …..	1	2	3	4	5	6
29. I do not purchase products from Black owned businesses..…… ……	1	2	3	4	5	6
30. I believe festivals maintain spiritual and physical balance in my community……..…..…….….	1	2	3	4	5	6
31. I perform various rituals for my departed ancestors……..	1	2	3	4	5	6
32. I see no problem assimilating into other cultural values in order to be financially successful……..	1	2	3	4	5	6
33. People of African descent should know about their rich history that began with the birth of humanity……..…… . .	1	2	3	4	5	6
34. I am actively involved in an African spiritual system..…… . .	1	2	3	4	5	6
35. Verbal agreements do not mean as much to me as written contracts do…. .	1	2	3	4	5	6
36. I do not own products that were made by people of African descent…..…	.1	2	3	4	5	6
37. I use words from an African language when participating in my spiritual practices……..…….……	1	2	3	4	5	6
38. People in America should only speak English..…….….	1	2	3	4	5	6
39. I will probably marry someone that is not Black.……..…	1	2	3	4	5	6
40. Members of my culture should have an appreciation for African art and music……..……..	1	2	3	4	5	6
41. My individual success is more important than the overall success of the Black community……	1	2	3	4	5	6
42. I expose myself to various forms of media (television, magazines, newspapers, internet, etc.) in order to keep up with current events that impact my community……..….	1	2	3	4	5	6
43. Blacks should not obtain reparations for being descendents of enslaved Africans since we are all reaping the benefits of slavery today…..……	1	2	3	4	5	6
44. I choose not to speak out against injustices that impact people of African descent……...……1	1	2	3	4	5	6
45. In embracing my culture, I can also recognize the dignity and humanity of other cultural groups……	1	2	3	4	5	6

46. What generation best applies to you?

1 = I was born outside of the U.S.

2 = I was born in the U.S.; My mother or father was born outside of the U.S.

3 = My parents and I were born in the U.S.; All grandparents born outside of the U.S.

4 = My parents and I were all born in the U.S.; At least one grandmother or grandfather was born outside of the U.S. with remainder born in U.S.

5 = All my grandparents, both my parents, and I were born in the U.S.

6 = Don't know what generation best fits since I lack some information.

DEMOGRAPHIC DATA SHEET

1. What is your age? (Please write in). _____

2. What is your gender? (Check one)

   Male ☐0

   Female ☐1

3. What is your country of birth? (Check one)

   United States ☐1

   Nigeria ☐2

   Other African Country ☐3

   Europe ☐4

   Canada ☐5

   Other ☐6

4. How long have you lived in the US? (Check one)

   Less than 1 year ☐1

   1 to 5 years ☐2

   6 to 10 years ☐3

   11 to 15 years ☐4

   16 to 20 years ☐5

   More than 20 years ☐6

5. Do you have sex with (Check one)

   Males ☐0

   Females ☐1

   Both ☐2

6. In what US state, do you currently live? (Choose one)

AL ☐1	LA ☐18	OH ☐35
AK ☐2	ME ☐19	OK ☐36
AZ ☐3	MD ☐20	OR☐37
AR ☐4	MA ☐21	PA☐38
CA ☐5	MI ☐22	RI ☐39
CO ☐6	MN ☐23	SC☐40
CT ☐7	MS ☐24	SD☐41
DE ☐8	MO ☐25	TN☐42
FL ☐9	MT ☐26	TX☐43
GA ☐10	NE ☐27	UT☐44
HI ☐11	NV ☐28	VT☐45
ID ☐12	NH ☐29	VA☐46
IL ☐13	NJ ☐30	WA☐47
IN ☐14	NM☐31	WV☐48
IA ☐15	NY ☐32	WI☐49
KS ☐16	NC ☐33	WY☐50
KY ☐17	ND ☐34	

7. What is your current marital status? (Check one)

Married	☐1
Separated	☐2
Divorced	☐3
Never married	☐4

8. What is the last year of schooling that you completed? (Choose one)

1 2 3 4 5 6 7 8 9 10 11 12	13 14 15 16	17 18 19 20
Elementary/Jr./Sr. High School	College	Graduate School

9. What is the current type of work that you do? (Check one)

Health-related	☐1
Not health-related	☐2
Unemployed	☐3
Student	☐4

10. What is your religion? (Check one)

Christian	☐1
Muslim	☐2
Traditionalist	☐3
None	☐4

11. What is your Nigerian State? (Choose one)

Abuja ☐1	Ekiti ☐14	Niger ☐27
Abia ☐2	Enugu ☐15	Ogun ☐28
Adamawa ☐3	Gombe ☐16	Ondo ☐29
Akwa Ibom ☐4	Imo ☐17	Osun ☐30
Anambra ☐5	Jigawa ☐18	Oyo ☐31
Bauchi ☐6	Kaduna ☐19	Plateau ☐32
Bayelsa ☐7	Kano ☐20	Rivers ☐33
Benue ☐8	Katsina ☐21	Sokoto ☐34
Borno ☐9	Kebbi ☐22	Taraba ☐35
Cross River ☐10	Kogi ☐23	Yobe ☐36
Delta ☐11	Kwara ☐24	Zamfara ☐37
Ebonyi ☐12	Lagos ☐25	
Edo ☐13	Nassarawa ☐26	

Thank you for participating in this important survey.

Institutional Review Board - New Brunswick

335 George Street Suite 3100, 3rd Floor New Brunswick, NJ 08901 Phone: 732-235-9806

Institutional Review Board - Newark

65 Bergen Street Suite 511, 5th Floor Newark, NJ 07107 Phone:973-972-3608

DHHS Federal Wide Assurance Identifier: FWA00003913

IRB Chair Person: Robert Fechtner

IRB Director: Carlotta Rodriguez

Effective Date: 1/9/2015

eIRB Notice of Approval

STUDY PROFILE

Study ID: Pro20140001068

Title: Relationships among Subjective Norms, Gender, Acculturation and the Intention to Engage In Risky Sexual Behaviors among US-Based Nigerians

Principal Investigator:	Olatubosun Aloba
Co-Investigator(s):	Charlotte Thomas-Hawkins

Sponsor:	Department Funded	**Approval Cycle:**	Twelve Months
Risk Determination:	Minimal Risk		

Review Type:	Expedited	**Expedited Category:**	7
Subjects:	2000		

CURRENT SUBMISSION STATUS

Submission Type:	Research Protocol/Study	**Submission Status:**	Approved
Approval Date:	12/26/2014	**Expiration Date:**	12/25/2015

Pregnancy Code:	45CFR46.204	**Pediatric Code:**	No Children As Subjects	**Prisoner Code:**	No Prisoners As Subjects

Protocol:	01.01.2015-Ola Aloba's IRB Protocol (v4) 1.docx	**Consent:**	12.31.2014-Ola Aloba-Online Consent Form(v3).pdf	**Other Materials:**	12.31.2014-Initial e-mail-Ola Aloba to Nigerian Community Leaders (v2) 12.31.2014-Follow-up e-mail-Ola Aloba to Nigerian Community Leaders (v2) Ola Aloba-MASPAD Survey Ola Aloba-Health and Safer Sex Behavior Survey 12.31.2014-Ola Aloba-Appendix C-Demographic Data Sheet (v3).pdf

*** Study Performance Sites:**

Rutgers, The State University Of New Jersey	College of Nursing, 180 University Avenue, Ackerson Hall-Room 330, Newark NJ 07102
US-based Nigerian Community Listserv	US-based Nigerian Community Listserv

ALL APPROVED INVESTIGATOR(S) MUST COMPLY WITH THE FOLLOWING:

1. Conduct the research in accordance with the protocol, applicable laws and regulations, and the principles of research ethics as set forth in the Belmont Report.

2. **Continuing Review:** Approval is valid until the protocol expiration date shown above. To avoid lapses in approval, submit a continuation application at least eight weeks before the study expiration date.

3. **Expiration of IRB Approval:** If IRB approval expires, effective the date of expiration and until the continuing review approval is issued: **All research activities must stop unless the IRB finds that it is in the best interest of individual subjects to continue. (This determination shall be based on a separate written request from the PI to the IRB.) No new subjects may be enrolled and no samples/charts/surveys may be collected, reviewed, and/or analyzed.**

4. **Amendments/Modifications/Revisions**: If you wish to change any aspect of this study, including but not limited to, study procedures, consent form(s), investigators, advertisements, the protocol document, investigator drug brochure, or accrual goals, you are required to obtain IRB review and approval prior to implementation of these changes unless necessary to eliminate apparent immediate hazards to subjects.

5. **Unanticipated Problems**: Unanticipated problems involving risk to subjects or others must be reported to the IRB Office (45 CFR 46, 21 CFR 312, 812) as required, in the appropriate time as specified in the attachment online at: http://rbhs.rutgers.edu/hsweb

6. **Protocol Deviations and Violations**: Deviations from/violations of the approved study protocol must be reported to the IRB Office (45 CFR 46, 21 CFR 312, 812) as required, in the appropriate time as specified in the attachment online at: http://rbhs.rutgers.edu/hsweb

7. **Consent/Assent**: The IRB has reviewed and approved the consent and/or assent process, waiver and/or alteration described in this protocol as required by 45 CFR 46 and 21 CFR 50, 56, (if FDA regulated research). Only the versions of the documents included in the approved process may be used to document informed consent and/or assent of study subjects; each subject must receive a copy of the approved form(s); and a copy of each signed form must be filed in a secure place in the subject's medical/patient/research record.

8. **Completion of Study:** Notify the IRB when your study has been stopped for any reason. Neither study closure by the sponsor or the investigator removes the obligation for submission of timely continuing review application or final report.

9. The Investigator(s) did not participate in the review, discussion, or vote of this protocol.

Subject line: US-based Nigerian Research Study

Dear Nigerian brother/sister,

My name is Olatubosun Aloba. I am a fellow Nigerian and a PhD candidate at Rutgers University, NJ. I am also a member of the National Association of Nigerian Nurses in North America (NANNNA). **I am asking for your participation** in an important research study that is required to satisfy the dissertation requirements for my PhD program.

The purpose of my research study is to gain an understanding about how US-based Nigerians' sexual health beliefs and customs, their gender, their level of acculturation to US culture and customs, and their intentions regarding sexual health behaviors are related to each other.

You will be one of approximately 108 US-based Nigerians who are being recruited on-line to complete an electronic survey. The survey will **take approximately 30 minutes to complete**. **All responses to the survey are anonymous and will be reported only as group data.**

This research study is important because there are inadequate studies that have explored this issue among US-based Nigerians even though Nigerians are the largest African immigrant group in the US. Your participation will assist with increasing our understanding of acculturation and sexual health intention among US-based Nigerians. Findings will facilitate culturally focused health care initiatives for US-based Nigerians.

This survey has been approved by the Rutgers Institutional Review Board. Please be assured that this survey is completely anonymous, meaning that your identity cannot be connected in any way to your survey answers. I do not have access to your contact information so your response cannot be traced back to you. Participation in the survey is voluntary. You can opt out at any time with no consequence to you.

Once you have completed the survey, you will have the option of going to a separate link to provide your e-mail address to register for a chance to win $150.00 gift card prize. This link is not connected to your survey answers. Your email address will be used only for the drawing. The drawing for the winner will occur two weeks after the research study is completed.

Your voluntary participation in this survey is appreciated. Thank you for assisting me with this important research study. Please feel free to contact me at carlige@aol.com or 973-476-1825 with any questions.

If you have questions about your rights as a research subject, please contact the Rutgers Health Sciences IRB-Newark Campus IRB Director at (973)-972-3608.

If you are interested in participating in this research study, please click on the link below to read the consent form and complete the survey. Thank you for your time.

https://oaloba-thesis-survey.com/

Sincerely,
Olatubosun Aloba, RN, MSN, APN,
PhD Candidate,
School of Nursing,
Rutgers, the State University of New Jersey.

Online Survey

Informed Consent Form

Study Title: Relationships among Subjective Norms, Gender, Acculturation and the Intention to Engage In Risky Sexual Behaviors among US-Based Nigerians

My name is Olatubosun Aloba. I am a doctoral candidate at Rutgers, the State University of New Jersey. You are being asked to participate in a non-experimental research study that is being conducted by me as the principal investigator (PI) at Rutgers University. This research study will be conducted in collaboration with my faculty advisor and co-investigator, Charlotte Thomas- Hawkins, PhD, RN.

Purposeofthestudy:

The purpose of this research study is to gain an understanding about how US-based Nigerians' sexual health beliefs and customs, their gender, their level of acculturation to US culture and customs, and their intentions regarding sexual health behaviors are related to each other. You will be one of approximately 108 US-based Nigerians who are being recruited on-line to complete an electronic survey.

Whatwillbedone?

You will complete a one-time on-line survey that will take about 30 minutes to complete. The survey includes questions about yourself such as your age and your gender. You will also answer questions about the extent to which you have adopted US customs and practices, your beliefs about the expectations that persons important to you have about your sexual health behaviors, your own attitudes about sexual health behaviors, and your intentions for protected sex and multiple partners. Your completion of the survey will serve as your consent to participate in this research study.

I have no way of identifying anyone who has completed the online survey.
Therefore, one week after you receive this e-mail directing you to my study link, you will get another e-mail with the study link to thank you for completing the survey and to remind you to complete the survey if you have not yet done so. This follow up procedure will be repeated again at the third, fifth, and seventh weeks after this initial e-mail to you. This study is expected to last 3 to 6 months in duration. Participation in this research study is voluntary. The only alternative to this study is not to participate.

Risksordiscomforts:

There are no anticipated risks to you for participation in this research study. By this, I mean that the questions you will be asked should pose no more than minimal risk than you will encounter in your daily life. You may feel slightly uncomfortable answering some questions about your sexual health. If you feel uncomfortable with a question, you can skip that question or withdraw from the study altogether without any penalty to you.

If you need additional assistance, you may contact a local referral counseling service of a licensed mental health professional, your own private health insurance carrier, or other affordable health care counseling services, such as HealthCare.gov, website: https://www.localhelp.healthcare.gov/ or call toll free, Consumer Information: 1(800) 318 2596. You may consider contacting your Employee Assistance Program (EAP) if available from your employer. If you decide to quit at any time before you have finished the questionnaire, your answers will NOT be recorded.

Benefitsofthisstudy:

There is no direct benefit to you for participating in this research study. However, you will be contributing to knowledge gained regarding the relationships among subjective norms, gender, acculturation, and intentions regarding sexual health among US-based Nigerians. In addition, findings from this study may assist health care providers in reaching out to out to US-based Nigerians regarding sexual health initiatives or programs.

Confidentiality:

Your participation in this study is anonymous. That means that I will NOT know your IP address when you respond to the Internet survey, and I will not collect any information from you that identifies who you are. Therefore, your answers to questions on the survey **cannot** be linked to you in any way. Other people on your list-serve have no way of knowing that you participated in this study. All information you provide on the survey will be treated confidentially. I will enter your answers to survey questions into a database located on a secured computer. The computer and database files will be password protected. I will be the only person who has access to the password. Computer files will be backed-up on an external drive and secured in a locked file cabinet of which only myself will have access. Data collected from this study will be reported either verbally or in print only as a group or aggregate report. All electronic files will be destroyed five years after completion of the research study.

Compensation:

A chance drawing for a $150 Visa gift card will be raffled. At the end of the electronic survey, you will be invited to participate in the chance drawing. A link will be provided to a chance- drawing enrollment form on which you will type in your email address that will be used by me to contact the winner. This chance drawing enrollment form will not be linked back to your answers on the electronic survey, and your chance drawing enrollment form will be available only to me. I will create a computerized list of all email addresses provided by study participants who enroll for the chance drawing, and this list will be maintained on a secured computer that is password- protected. Two weeks after the study is completed, I will randomly select a chance drawing winner from the list of emails. I will use the winning e-mail to contact the winner in order to obtain the mailing address to send the gift card via U.S. postal, return-receipt mail. This e-mail list will be destroyed immediately after a winner is selected.

Withdrawal:

Your participation is voluntary; you are free to withdraw your participation from this study at any time. If you do not want to continue, you can simply leave this website. If you do not click on the "submit" button at the end of the survey, your answers and participation will not be recorded. You also may choose to skip any questions that you do not wish to answer. If you click on the “submit” button at the end of the survey, you will qualify for the drawing. The number of questions you answer will not affect your chances of winning the gift certificate.

Howthefindingswillbeused:

The results of the research study will be used for reporting research findings. The results from the study will be presented as group report at professional conferences and or might be published in scholarly or peer reviewed journals.

Contactinformation:

If you have concerns or questions about this research study, please contact the PI, Olatubosun Aloba, RN, MSN, APN at (973) 476-1825.

If you have questions about your rights as a research subject, please contact the IRB Director at (973)-972-3608 Newark.

By beginning the survey, you acknowledge that you have read this information and agree to participate in this research, with the knowledge that you are free to withdraw your participation at any time without penalty.

Subject line: US-based Nigerian Research Study

This is a follow-up e-mail to thank you for participating in my important research study if you completed the survey. If you have not completed the survey, I will really appreciate it if you would consider participating in this important research study by completing the survey. The survey is completely anonymous and takes only about 30 minutes to complete. Please see the survey details below. Thank you.

Dear Nigerian brother / sister,

My name is Olatubosun Aloba. I am a fellow Nigerian and a PhD candidate at Rutgers University, NJ. I am also a member of the National Association of Nigerian Nurses in North America (NANNNA). **I am asking for your participation** in an important research study that is required to satisfy the dissertation requirements for my PhD program.

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This survey has been approved by the Rutgers Institutional Review Board. IRB ID: Pro20140001068; Approval Date: 12/26/2014; Expiration Date: 12/25/2015. Please be assured that this survey is completely anonymous, meaning that your identity cannot be connected in any way to your survey answers. I do not have access to your contact

information so your response cannot be traced back to you. Participation in the survey is voluntary. You can opt out at any time with no consequence to you.

Once you have completed the survey, you will have the option of going to a separate link to provide your e-mail address to register for a chance to win $150.00 gift card prize. This link is not connected to your survey answers. Your email address will be used only for the drawing. The drawing for the winner will occur two weeks after the research study is completed.

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http://oaloba-thesis-survey.com/

Sincerely,
Olatubosun Aloba, RN, MSN, APN,
PhD Candidate,
School of Nursing,
Rutgers, the State University of New Jersey.