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NINA ISABELLA DIONISIO BELLO  
PAULA ANGELINE JARA CALAYAN

*Let's Talk About Sex:  
A Social Network Analysis of the Filipino Youth's  
Reduction of Risky Sexual Behavior*

Thesis Adviser:

Assistant Professor Jon Benedik Bunquin, MA

College of Mass Communication

University of the Philippines

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NINA ISABELLA DIONISIO BELLO  
PAULA ANGELINE JARA CALAYAN  
College of Mass Communication  
University of the Philippines

LET'S TALK ABOUT SEX:  
A SOCIAL NETWORK ANALYSIS OF THE FILIPINO YOUTH'S  
REDUCTION OF RISKY SEXUAL BEHAVIOR

by

NINA ISABELLA DIONISIO BELLO  
PAULA ANGELINE JARA CALAYAN

has been approved for  
the Department of Communication Research  
and the University of the Philippines College of Mass Communication  
by

Assistant Professor Jon Benedik Bunquin, MA  
Adviser

Professor Arminda V. Santiago, PhD  
Dean, College of Mass Communication

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## ABSTRACT

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As of 2019 data, the Philippines ranks as the country with the fastest growing number of HIV cases in the world. Social networks were explored as a means to prevent risky sexual behaviors that can lead to sexually transmitted infections or unintended pregnancy. This study produced a model explaining the role of the Filipino youth's social networks in the reduction of their risky sexual behaviors. Egocentric social network data were collected from 408 youth aged 18 to 30 years old in Quezon City and the City of Manila. Structural Equation Modeling demonstrated that sex, educational attainment, self-efficacy, as well as educational attainment mediated by network size to be significant driving factors that could help in reducing risky sexual behavior. It is recommended that stakeholders consider educational attainment as a key factor in designing programs that reduce risky sexual behavior, considering the significance of the networks of individuals. The study revealed several implications for health education in the local and national context. Sex-related information from health clinics can be disseminated in groups as well to educate the entire network of an individual. The integration and participation of social institutions, namely the Church and the family, in the open discourse of sex is also recommended.

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## I. INTRODUCTION

### A. Background of the Study

According to the 2018 report by the Joint United Nations Programme on HIV and AIDS (UNAIDS), the Philippines had the fastest-growing number of Human Immunodeficiency Virus (HIV) cases in the world. A total of 13,384 new HIV infections were recorded in 2018, a 203% increase over the past decade, in contrast with the world's 16% decline. Consequently, engagement in risky sexual behavior remains a significant public health concern. The Department of Health Secretary Dr. Paulyn Jean Rosell-Ubial declared that "HIV is one of the top health priorities for the government of the Philippines" (DOH, 2018, par. 9).

One of the main strategies used to lower the risk of HIV transmission is prevention. Prevention efforts generally focus on key populations. Key populations—men who have sex with men, people who inject drugs, people in prison and confined settings, sex workers, and transgender people—are individuals who, because of their networks, behaviors, or occupations (UNAIDS, 2011), are more vulnerable to HIV infection, and yet are the least likely to have access to its prevention, testing, and treatment services (WHO, 2014). This is mostly because of the laws, policies, or stigma and discrimination, and collective and individual prejudice within services (USAIDS, 2019).

Young people who belong to one or more of these key populations are made especially vulnerable to HIV. Even when they are facing some of the greatest barriers to HIV care, they are frequently overlooked (Cornell & Dovel, 2018), and specific needs of

young people from key populations are neglected both by programs designed for youth generally and by programs for adults from key populations (WHO, 2019).

Statistics showed that young people are more vulnerable to STIs, HIV, and other sexual and reproductive health problems than the older population. Young people (aged 15–24 years) accounted for one-quarter of new HIV infections in the Asia and Pacific region in 2018, the Philippines represented the largest proportion of young people living with HIV/AIDS (PLWH) with 69% (UNAIDS, 2019). Additionally, of the newly confirmed HIV-positive individuals reported to the HIV/AIDS & ART Registry of the Philippines (HARP), 80% of them hailed from younger age groups. Almost half (49%) of those who tested positive were 25 to 34 years old and 32% were 15 to 24 years old at the time of testing (Department of Health, 2019).

### *1. Youth Sexual Behavior*

Adolescents and young adults are at increased risk for HIV because they are in their period of developmental, psychological, social, and structural transitions (Bekker & Hosek, 2015). The transition from childhood to adulthood is also a time for exploring and navigating peer relationships, gender norms, sexuality, and economic responsibility (STOPAIDS, 2016).

It is important to focus on young people because of their vulnerability to sexual and reproductive health (SRH) and HIV. Some of the contributing factors that increase this vulnerability involve their early sexual debut and their lack of information. This is because sexual activity usually begins in adolescence and the awareness of HIV and STIs is a crucial tool to prevent it (STOPAIDS, 2016). More so, they are also exposed to unprotected sex. Excluding vertical transmission, unprotected sex is the most common

route of HIV infection for young people (Idele, Gillespie, Porth, Suzuki, Mahy, Kasedde, & Luo, 2014). For some, this is a result of not having the correct knowledge about HIV and how to prevent it (AVERT, 2019).

This holds true in the country. According to the latest Young Adult Fertility and Sexuality Study, the proportion of the Filipino youth's early sexual initiation had increased from 13% in 1994 to 23% in 2013. The prevalence of premarital sex had also shifted upwards, from 17.8% to 32.2% (YAFS3, 2013).

According to the 2013 National Demographic and Health Survey, Filipinos have low access to sexual and reproductive health. Contraceptive prevalence was at 42.8% among married women aged 15-49 years, with only 35.7% using modern methods. Adolescents were far more likely than all women of reproductive age to be using traditional methods, which have far higher failure rates than most modern methods (Trussell, 2007). Furthermore, between 1997 and 2015, teen fertility rates had increased from 49 to 59.2 births per 1,000 women (aged 15-19 years) (The World Bank, 2016).

This tendency for more young people to engage in pre-marital and unprotected sex and get married highlights the need for reproductive health services and information, including sexuality education and contraceptives.

It is crucial that all people living with HIV have access to treatment as soon as they are diagnosed, and that they are able to achieve viral load suppression. In 2018, only about half of people living with HIV in Asia and the Pacific were virally suppressed. Similarly, access to multiple HIV prevention services ranged from poor (less than 50%) to almost non-existent in eight of the 12 countries reporting these data for 2018 (UNAIDS, 2019).

HIV and AIDS have been major threats to human health since it was first detected in 1981. In the Philippines, the first AIDS cases were identified in 1984 and the first HIV infections documented were from 1985 (Department of Health, 1999). Since then, the number of reported cases grew steadily. The latest figures from HARP showed an accumulated 58,181 HIV antibody seropositive reported cases in the country since 1984. Seventy two percent or 46,802 of those reported cases were solely from January 2014 to January 2019. What was more alarming was that more than half (29,740 or 51%) of the total diagnosed cases were from the ages 25 to 34 while 16,383 (28%) were from ages 15 to 24 (Department of Health, 2019). These records showed how unsettling this phenomenon is for the youth.

## 2. *Sex as a Taboo*

The alarming percentage of HIV-related cases among the Filipino youth is partly due to the lack of comprehensive sex education which teaches them how to practice safe sex. This type of education is commonly frowned upon because sex has always been a taboo in the Philippines (de Vera, 2019; Rosenfield, 1999). The epidemic of HIV/AIDS had been stigmatized and avoided at personal and societal levels, resulting in a lack of sex and HIV education in households, schools, and the health care system (de Irala, Osorio, del Burgo, Belen, de Guzman, del Carmen Calatrava, & Torralba, 2009; Nadal, 2009).

Stigma and discriminatory attitudes towards people living with HIV continue to be major impediments to HIV prevention, treatment, and other health-related services in Asia and the Pacific. In the latest Global AIDS Update, 60% of the Filipino youth still said they would not buy vegetables from a vendor living with HIV and at least half of

them felt that children living with HIV should not be allowed to go to school with other children (UNAIDS, 2019).

Sexual discussions remain as a taboo due to social institutions such as politics, family, and religion, who play a part in its suppression.

Family and religion are the two most important social systems in Filipino culture (Alampay & Jocson, 2011; Chen, Thompson, & Morrison-Beedy, 2010; Nadal, 2009). The World Values Survey (1996) stated that Filipinos valued family, work, and religion the most, with an overwhelming 98.8%, 90.5%, and 80.5% of incidence respectively.

A high regard for religion has brought about a conservative culture in the country (Gutierrez & France-Pressé, 2010; Jaymalin, 2019; Nadal, 2011; Ochoa, Sio, Quiñones, & Manalastas, 2016), where sex is often framed as a morality issue (Gutierrez & France-Pressé, 2010; Ochoa et al., 2016; Simons & Peterson, 2009) since majority believe that the only morally and legally acceptable sexual behavior was heterosexual intercourse within a monogamous marriage (de Irala et al., 2009; Delgado-Infante & Ofreño, 2014).

The Catholic Church wields considerable political power and has a significant impact on social norms, laws, policies, and access to social and health services that affect the protection of children from sexual abuse, exploitation and violence (UNICEF, 2016). The Responsible Parenthood and Reproductive Health Act of 2012 (Republic Act No. 10354), was passed after years of contentious debate on who should have the responsibility to educate children about sex. The law now mandates public schools to provide age-appropriate reproductive health education to adolescents, but the Catholic Church believes that teaching sex education is the primary and sole responsibility of parents and guardians (Jaymalin, 2019).

Comparably, among Filipinos, the family is the most important social group, and children are expected to obey parental authority (Alampay & Jocson, 2011; Nadal, 2009). Even with the influence of peers and media, parents are the most important agents of socialization because adolescents develop religious beliefs and associate moral standards within the family context. In particular, the concept of parental religiosity influenced adolescent risky sexual behavior through its impact on authoritative parenting, adolescent religiosity, and adolescent affiliation with less sexually permissive peers (Landor, Simons, L., Simons, R., Brody, & Gibbons, 2011).

Religion has shaped the values and beliefs among Filipino families and individuals (Delgado-Infante & Ofreño, 2014; Nadal 2009). The conservative religious culture of the country reduces the possibilities for open discussions of sex, as well as machismo and other values of male domination over women, which affect a woman's ability to adopt risk-reducing behaviors (Tan, 1993). Further, sexually active adolescents who identified themselves as religious were found to be less likely to practice safe sex through consistent condom use (Zaleski & Schiaffino, 2000). The influence of Catholicism made parents believe that it is unlikely for children to engage in premarital sex. Therefore, discussions of safe sex practices are deemed unnecessary (Nadal, 2009).

Clearly, there is a lack of a safe and healthy discourse about sex in the Philippines. The abovementioned statistics and context of the Philippine society have implications as to how sex was and is discussed. There are forces which "contribute to the establishment of pervasive and multiple (but sanctioned) discourses on sex" (Shoveller, 2006, p. 49) and regulate discourses on sex. These forces are the country's culture, political background, and educational policies which facilitate discussions

(Szucs, 2013) and make sex a highly controversial domain (Irvine, 2002, as cited in Szucs, 2013). Debates about sex are common because of the subject's controversial nature. While it is pragmatic and helpful to talk about, in the case of the density of debates in the Philippines, there is a tendency for it to silence the youth. The youth are not given the opportunity and space to voice out their understanding and concerns about sexuality. Sex education in the Philippines reiterates this by denoting the youth as disempowered and passive when it comes to receiving sexual education (Szucs, 2013).

Not giving the youth the means to voice out themselves with respect to their sexuality limits their sense of expression and disregards its significant potential (Szucs, 2013) in changing the dynamics of sexual discourse, and ultimately helping reduce the problems attached to risky sexual behavior. Instead of silencing them, discourse could empower people—the youth—in this case. And discourse occurs, basically, through interactions with other people.

### *3. Risky Sexual Behaviors in the Online World*

The dawn of digital media has its impact on discourses about sex. Looking at the issue on a bigger scale, in early 2019, about 57% of the global population was connected to the internet and there were approximately 3.5 billion social media users, almost all of whom accessed social media on their phones. It goes without saying that the internet and social media have become ubiquitous sources of information and potent communication tools for Filipinos, especially the youth (DRDF & UPPI, 2013). Filipinos spent an average of 8 hours a day online last 2018 (Hootsuite, 2019), and according to the YAFS 4, 58.9% of the Filipino youth have used the internet and 80.3% of whom reported using the internet for social networking.

Studies on youth have always cited the role of mass media in shaping young people's behavior and attitudes. Social media has emerged as a source of risk and risk mitigation as increasingly sophisticated social media platforms offer new ways to link people at high risk of HIV infection to prevention services (UNAIDS, 2019).

Hence, it is alarming to see the youth experience health-related issues due to risky sexual behaviors. Defining risky sexual behavior depends on what its researchers aim to identify. In addition, given the emergence of the online sphere as an entirely different world, its definition differs online and offline. Commonly, offline, it accounts for behaviors that are associated with unintended pregnancy or sexually transmitted infections (STI) such as the Human Immunodeficiency Virus (HIV) (Centers for Disease and Control, 2017). Generally, risky sexual behavior encapsulates any kind of behavior that has an increased chance of resulting in a negative outcome (Mirzaei, Ahmadi, Saadat, & Ramezani, 2016). This implies that the risk is physical in nature.

## B. Statement of the Problem and Objectives

The pressing concern for the Philippines in facing an increase in HIV/AIDS-related cases especially among the youth emphasizes the need to study the Filipino youth's reduction of risky sexual behavior. The youth's disinformation and misinformation aided by the lack of sexual discourse heightens this contingency. This signifies the importance of the youth's sexual communication networks in reducing their risky sexual behavior, be it online or offline. This study aims to know:

*How do the social networks of the Filipino youth influence their reduction of risky sexual behaviors?*

This question was answered through the attainment of the following study objectives:

1. To determine the Filipino youth's:
  - a. Individual background
  - b. Social media practice
  - c. Individual beliefs
  - d. Intention, attitudes, and subjective norms towards risky sexual behaviors;
2. To describe the social networks of the Filipino youth when it comes to the discussion of risky sexual behaviors;
3. To illustrate the Filipino youth's risky sexual behavior social network structure in terms of its:
  - a. Network size
  - b. Network closeness
  - c. Network homophily
  - d. Network density; and
4. To link the Filipino youth's social network with their reduction of risky sexual behaviors.

### C. Significance of the Study

#### *1. Theoretical*

An understanding of the risky sexual behavior social networks of the Filipino youth through the lens of the Social Network Theory gives a different perspective on

their sexual behaviors and its motivations. More so, the theory is mostly common in Western studies and is less utilized in the Philippine context. The study enriches the theory and provides a better grasp of the social networks of the Filipinos. It identified that the Social Network Theory works as a viable means of understanding the risky sexual behaviors of the Filipino youth, taking into account the close-knit social relations of the Filipinos as expressed by the concern-for-others culture of *pakikisama*, *kapwa*, *utang ng loob*, *pakikiramdam*, and *kagandahang-loob* (Enriquez, 1992, as cited in Pe-Pua & Marcelino, 2002). This study can also help identify which characteristics of their social networks reduce or encourage risky sexual practices.

## 2. *Methodological*

The study of sexual behavior through communication networks was made locally relevant due to the inclusion of variables that follow the Philippine context, such as religiosity and self-efficacy. A new method of looking into the sexual behavior of the Filipino youth was introduced through this study which can work hand-in-hand with existing measures like the Young Adult Fertility and Sexuality (YAFS) study. Moreover, this study gives a quantitative take on risky sexual behaviors, whereas it has been a prevalent practice to study sex in a more qualitative manner, taking into account the amount of sensitivity and maturity needed to explore it.

This study can enrich the way scholars look into sexual behavior by determining the information-sharing behavior of the youth about risky sexual information. This study came to fruition not only to discover whether the Filipino youth of today are risky in terms of sexual practices, as it also attempted to also identify how they were able to equip themselves with the current knowledge they have about RSB even before they begin

engaging in such behaviors. In this study, we suggested that they know what they know through their risky sexual behavior social network - an angle of predicting behavior before behavior takes place.

### *3. Practical*

The prevailing dominance of historical, religious, and political ideologies challenges the potential of open, healthy, and safe sexual discourses in the country, rendering it a taboo. The inability to openly speak up about the topic compels the Filipino youth to seek information themselves. Commonly, they turn to individuals whom they are close to for information (de Vera, 2019), but their counsel may not be accurate at times or they may not be the right sources, thus possibly carrying negative consequences to their health. There is then a need to learn how sexual behavior is being discussed in their groups or in this case, their social networks, to find out which relationships play in the youth's reduction or reinforcement of risky sexual behaviors. Ultimately, this can follow the outcome of previous studies on the sexual behavior social networks of the youth, where network properties can help decision-makers and stakeholders in the medical field identify which aspects of social relationships can be targeted to reduce the consequences of risky sexual behaviors such as unwanted pregnancy or sexually transmitted infections. Previous studies have identified, for instance, the opinion leaders/movers of information in particular sexual behavior social networks and have utilized these people to spread information circling condom usage and safe sex (Amirkhanian, Kelly, Kabakchieva, McAuliffe, & Vassileva, 2003; Amirkhanian, Kelly, Kabakchieva, Kirsanova, Vassileva, Takacs, DiFranceisco, McAuliffe, Khoursine, & Mocsonaki, 2005; Lau, J., Lau, M., &

Tsui, 2013; Zhang, H. Zhu, Wu, Pang, Zhang, L., Li, Yu, Yang, Zhang, R., & Wang, 2009).

Reproductive health care is incorporated in the mandate of the Department of Health, where it is imperative that reproductive health-related services, counseling, and information be given to any Filipino who is in need of it (Department of Health, n.d.) through certified clinics. Health centers and clinics can target not only individuals themselves but their in-groups as well. Seeing how the network in which a person is embedded in can play a part in their behavior, centers and clinics can further reduce risky sexual behavior when they consider the individual's social circle. Sex-related information from these clinics can be disseminated in groups as well in order to educate the entire network. Moreover, determining the degree of riskiness of the current Filipino youth when it comes to practicing sexual behaviors can add to already existing information that helps the government determine the gravity of the issue, which further measures to take, and what programs can be generated.

## II. REVIEW OF THE RELATED LITERATURE

This review of related literature is comprised of four parts: (1) Risky Sexual Behavior (RSB), (2) Communication Networks and Sexual Behavior, (3) a Synthesis of Studies, and (4) the Gaps in Research. The first section introduced and delved deeper into the context of the study, this includes RSB studies in the Philippines, predictors of RSB, and RSB in the age of social media. The second section looked into the role of Communication Networks in Sexual Behavior, which includes the social network paradigm in studying RSB as well as the network predictors of RSB. The third section synthesized related literature to get a better grasp at the study, and the fourth part assessed the research gaps that could be addressed.

### A. Risky Sexual Behavior (RSB)

#### 1. *Risky Sexual Behavior Studies in the Philippines*

Philippine studies on risky sexual behavior generally had key populations as their focus. Although the studies were limited, they primarily focused on the prevention of HIV and AIDS. A great number of these studies have specifically looked into female sex workers (Amadora-Nolasco, Albuero, Aguilar, & Trevathan, 2001; Aplasca de los Reyes, Pato-Mesola, Klausner, Manalastas, Wi, Tuazon, et al., 2001; Hayes, Manaloto, Basaca-Sevilla, Padre, Laughlin, O'rourke, et al., 1990; Liu & So, 1996; Munn, Moola, Riitano, & Lisy, 2014; Nishimura-Takahashi, Akabayashi, Kai, Cabigon, Ohi, & Naka, 1998; Urada, Simmons, Wong, Tsuyuki, Condino-Enrera, Hernandez, et al., 2016; Wi, Mesola, Manalastas, Tuazon, Mugrditchian, Perine, et al., 1998; Morisky et al., 2004, 2010). Local research on sex workers grew in conjunction with its rise in HIV-positive cases. Tan (1993) studied the socio-economic impact of HIV/AIDS in the Philippines where

over the 200,000 HIV-positive cases in the country, more than half of them were registered establishment-based female commercial sex workers (FCSWs). Further, those who remained unregistered at a social hygiene clinic were more prone to risky sexual behaviors with seven times less probability to use condoms with their customers than registered FCSWs (Abellanos & Nichter, 1996).

A wide range of studies have also focused on various high-risk groups such as men who have sex with men (Gangcuangco, Tan, & Berba, 2013; Italia, & Oducario, 2014), people who inject drugs (Amadora-Nolasco, Alburo, Aguilar, & Trevathan, 2002; Verdey, Siripong, & Pence, 2017), incarcerated females (Simbulan, Aguilar, Flanigan, & Cu-Uvin, 2001), seafarers (Guevarra, Pineda, & Dorotan, 2010; Saniel & Sarah, 2010), taxicab and tricycle drivers (Morisky, Nguyen, Ang, & Tiglao, 2005), and call center workers (Batara, Areopagita & Yu, 2016; Melgar, Ofreneo, Kintanar, & Cand 2009). They have been studied upon because their situations (i.e. work and environment), allow for the spread of HIV/STIs. The prevalent risk factor among these high-risk groups were behavioral, the most common being self-reported condom use (Abellanos & Nichter, 1996; Nishimura-Takahashi, Akabayashi, Kai, Cabigon, Ohi, & Naka, 1998; Amadora-Nolasco, Alburo, Aguilar, & Trevathan, 2001; Morisky, Tiglao, Sneed, Tempongko, Baltazar, Detels, & Stein, 1998; Chiao, Ksobiech, Malow, Morisky, Stein, Sneed, Tiglao, Liu, Detels, Baltazar et al., 2006; Morisky, Stein, Sneed, Tiglao, Liu, Detels, et al., 2002; Liu & So, 1996; Urada, Malow, Santos, Morisky, 2012; Morisky, Peña, Tiglao, & Liu, 2002; Morisky & Regan, 2013; Morisky & Tiglao, 2010), and substance use (Chiao, Ksobiech, Malow, Morisky, & Rosenberg, 2006; Urada et al., 2016).

Morisky et al. (2005) evaluated the effects of an educational and behavioral intervention among taxi and tricycle drivers in the Philippines with respect to increased changes in HIV/AIDS knowledge, attitudes toward condoms, and condom use behavior (KAB) and found peer-mediated intervention to be an effective means of HIV/AIDS prevention. While Gangcuangco et al. (2013) found that the HIV epidemic among men having sex with men was catalyzed by persistently low condom use and high risk-taking behaviour and found work as a business process outsourcing employees (BPOE), preference for receptive anal sex and sex while under the influence of excessive alcohol were independently associated with HIV.

In Cheng, Gipson, Perez, and Cochran's (2016) study, young adults reporting same-sex behavior had higher odds of smoking, drug use, perceived stress, and more sexual partners as compared to their peers. Males who reported same-sex behavior initiated sex earlier and had more sexual partners than those who did not report same-sex behaviors. On the other hand, women with same-sex experience were six times more likely to report drug use than women who had not engaged in same-sex behavior. In Regan, Dyer, Gooding, and Morisky's (2003) study, men who used drugs had earlier sexual debuts, were more likely to report two or more recent sexual partners, and were more likely to report ever having sex with a female sex worker as compared to non-drug users. However, they also found the odds of more frequent condom use with a regular partner were greater for men who used drugs compared to non-drug users.

Aside from these high-risk groups, a growing body of literature has focused on the youth for their steep rise in HIV/AIDS-related cases, a similar fate to sex worker studies during HIV/AIDS' emergence in 1981. These studies evaluated risky sexual

behavior according to condom use (Laguna, 2004; Marquez, 2004, 2008; Osorio, Lopez-del Burgo, Ruiz-Canela, Carlos, & de Irala, 2015), premarital sex (Laguna, 2004), early sexual initiation (Cheng, Gipson, Perez, & Cochran, 2016), sexual abstinence (Lacson, Theocharis, Strack, Sy, Vincent, Osteria, & Jimenez, 1997), commercial, and casual sex (Marquez, 2004, 2008), sex with multiple partners, and with the same gender (Cheng et al., 2016; Marquez, 2004, 2008). Parental influence, as well as sexual knowledge, were also found to be some of the key factors that influenced youth sexual behavior.

Being knowledgeable is expected to reduce the likelihood of engaging in risky sexual behaviors. However, studies have shown that those who are more knowledgeable tend to engage in more risky sexual behaviors (Lacson et al., 1997; Laguna, 2004; Rodriguez, Galang, Balila, & Mergal, 2013). Rodriguez et al. (2014) recognized how knowledge helps to dispel misinformation and enables responsibility for one's sexual health, while Lacson et al. (1997) discerned that the youth were only knowledgeable at some topics, specifically about AIDS and pregnancy risk, and not on condoms and contraception in general, which might still put them at risk from unintended pregnancy and HIV/AIDS infection. Laguna (2004) also highlighted in his study the misconceptions the youth still has regarding AIDS such as modes of transmission, AIDS as a punishment from God, AIDS as a curable disease, and the general feeling of non-susceptibility to infection. He recognized no definitive conclusion on knowledge's effect on the likelihood to engage in sex and adopt safe sex practices and said that only to some extent, adequate knowledge may in fact contribute to the adoption of safer sex practices such that among those with premarital sex, low knowledge of AIDS explained the likelihood of not using a condom.

Studies also recognized the different mechanisms on how family—specifically the parents—provided protection from adolescent sexual risk-taking. Increased parental communication consistently predicted a decrease in the likelihood of the young to engage in sexual risk-taking activities while cultivating a closer relationship between the parents and children may also be a deterrent to sexual risk-taking. This is because adolescents who felt highly connected with their family were more likely to refrain from venturing into risky sexual activities (Marquez, 2004, 2008).

## *2. Predictors of Risky Sexual Behavior*

Sexual behavior altogether is complex - it is influenced by a mix of interpersonal, social, and economic factors in a variety of situations. It is important to understand this behavior in specified conditions with the likes of age, environment, and culture. Aside from the communities that were commonly studied for risky sexual behavior, other literature focused on the behaviors' predictors. The most consistent predictors, however, were demographic and behavioral variables. Demographic variables are particular characteristics of a population such as age, sex, and location. Behavioral variables are those relating to a behavior such as substance use, attitudes, and motivations. This study determined demographic variables, specifically, the background variables, as well as behavioral variables, specifically, the belief variables of the youth.

### *Background Variables*

The researchers focused on determining the age, sex, educational attainment, and income to define the background of an individual.

Age was one of the widely studied variables in predicting RSB. Studies indicated that as an individual grows older, the more they engage in riskier sexual behavior

(Belgrave, Van Oss Marin, & Chambers, 2000; Klein, Brown, Dykers, Childers, Oliveri, & Porter, 1993; Ludwig & Pittman, 1999; Shorey, Fite, Choi, Cohen, Stuart, & Temple, 2015; Sun, Liu, Shi, Wang, Y., Wang, P., & Chang, 2013). On the contrary, studies by Ekstrand and Coates (1990) and Kelly et al. (1995) found the younger age groups to be riskier when it comes to sexual behavior. Meanwhile, Remafedi's (1994) study found no association between the two. A reason for this may be due to the fact that Ekstrand and Coates (1990), Kelly et al. (1995) and Remafedi (1994) studied sexual behavior among gay and bisexual men, while the studies that indicated a higher RSB as age increased had only male and female respondents.

In terms of gender, literature is divided in terms of which is the better predictor of RSB. A set of studies predicted men to be riskier (Belgrave et al., 2000; Fentahun & Mamo, 2014; Klein et al., 1993; Lewis, Lee, Patrick, & Fossos, 2007; Locke, Newcomb, & Goodyear, 2005; Luder, Pittet, Berchtold, Akre, Michaud, & Suris, 2011; Ludwig & Pittman, 1999; Shearer, Hosterman, Gillen, & Lefkowitz, 2005), while some literature pointed to females (Brown, L. K., Tolou-Shams, M., Lescano, C., Houck, C., Zeidman, J., Pugatch, D., ... & Project SHIELD Study Group., 2006; Sun et al., 2013; Temple, Paul, Van Den Berg, Le, McElhany, & Temple, 2012; Wingood, DiClemente, Harrington, Davies, Hook, & Oh, 2001; Yi, Te, Pengpid, & Peltzer, 2018).

Notwithstanding, these studies also had caveats. The divide in gender was possibly due to other factors such as countries' varying cultures as well as their specific age cohorts. One of the prevalent factors that may have affected these studies was masculinity gender roles (Belgrave et al., 2000; Locke et al., 2005; Shearer et al., 2005). For instance, females in the Philippines were more conservative in that they were expected to control and set

limits on male sexuality (Medina, 2001; Santa Maria, 2002), and uphold the value of “hiya” or shame (Cruz, Laguna, & Raymundo, 2001) while the males were encouraged to engage in sexual activities (Cruz et al., 2001; Medina, 2001; Santa Maria, 2002) and were allowed more sexual freedom (Medina, 2001; Santa Maria, 2002). While studies on RSB mainly point to gender, some had used it to mean sex referring to the biological differences between males and females. In this regard, the current study will also be use the biological term when pertaining to sex.

Educational attainment was not studied much and findings vary on whether education increased or decreased RSB; nonetheless, there exists a significant association between the two (Kelly et al., 1995; Mahdavian & Zolala, 2017). This highlights the need to delve deeper into the relation as it may vary from context to context. Studies have explained negative attitude toward school, and low educational aspirations as predictors of early sexual debut (Coker, Richter, Valois, McKeown, Garrison, & Vincent, 1994; Luster & Small, 1997; Resnick, Bearman, Blum, Bauman, Harris, Jones et al., 1997), poor academic performance as an important factor in the occurrence of unprotected sexual intercourse (Blum, 1987), and the overall academic progress as important to reducing sexual risk (Taylor-Seehafer & Rew, 2000).

Studies focusing on income showed that individuals were more likely to engage in risky sexual behavior if they came from lower socioeconomic families (Brook, Morojele, Zhang, & Brook, 2006; Brown et al., 2006; Peterson, Coates, Catania, Middleton, Hilliard, & Hearst, 1992). These studies have looked into the marginal status of their respondents and found those who lived in poverty (Brown et al., 2006) or below the poverty line (Brooke et al, 2006; Peterson et al., 1992) were more vulnerable to RSB.

Brown et al. (2006) owed this to their relative lack of knowledge about risky sexual behaviors, lack of access to condoms, and lack of empowerment with respect to the negotiation of safer sex behaviors. This can be applied in the local context where 21.6% of the population lived below the poverty line in 2015 (Guido, 2019). This also hints at how income interrelates with other variables such as educational attainment and self-efficacy.

### *Belief Variables*

Belief variables refer to the religiosity and self-efficacy of an individual. A large volume of studies suggested that religious belief was an important protective factor for reducing RSB. However, the term had been defined differently across studies. Some variations include religious values (Langer, Warheit, & McDonald, 2001; Zaleski & Schiaffino, 2000), frequency of religious visits (Abebe, Tsion, & Netsanet, 2013), and even parent religiosity (Landor, Simons, L., Simons, R., Brody, & Gibbons, 2011). Studies like McCree, Wingood, DiClemente, Davies, & Harrington (2003) even developed a religiosity score that incorporated some of these values. The study determined that adolescents with higher religiosity scores were significantly more likely to have higher self-efficacy in communicating about sex and in refusing an unsafe sexual encounter. They were also more likely to have initiated sex at a later age, used condom in the past six months and possessed more positive attitude towards condom use.

Self-efficacy was another sexual belief variable that was established as an important protective factor for reducing RSB. Self-efficacy was a central element of Bandura's (1986) Social Cognitive Theory. According to him, individuals who have high self-efficacy for a specific skill were more likely to perform that skill. Studies found

various types of self-efficacy to negotiate safer sex (Sionéan, DiClemente, Wingood, Crosby, Cobb, Harrington, K... & Oh, 2002; Thomas & Jason, 2000). This could refer to as one's confidence in negotiating sex. For instance, Sionéan et al. (2002) found condom use self-efficacy associated with reported condom use. Studies also found that self-efficacy refused or resisted sexual behavior (Bandura, 1994; Dilorio, Dudley, Kelly, Soet, Mbwarra, & Potter, 2001; Kasen, Vaughan, & Walter, 1992; Wiener, Battles, & Wood, 2007). This could refer to one's confidence in their ability to refuse sex without a condom. Scoring high on self-efficacy was also found to delay sexual intercourse (Carvajal, Parcel, Basen-Engquist, Banspach, Coyle, Kirby, & Chan, 1999; Santelli, Kaiser, Hirsch, Radosh, Simkin, & Middlestadt, 2004). This could be expressed as one's confidence in refraining from having sex in situations where they might otherwise be inclined to do so.

### *3. Risky Sexual Behavior in the Age of Social Media*

Social media emerged as a source of both risk and risk mitigation of sexual behaviors. Scholars have noted the trend between the increase in STDs among the youth with the increase in social media use (Moreno, Vanderstoep, Parks, Zimmerman, Kurth, & Christakis, 2009; Young & Jordan, 2013). Conversely, these sophisticated social media platforms also offered new ways to link people at high risk of HIV infection to prevention services (UNAIDS, 2019).

In the online community, risky sexual behaviors were seen as a plausible result of sexting, particularly referred to as the exchange of sexual images and/or texts or meeting sexual partners. Social media provided access to partners that were more experienced, and its perceived privacy led to increased communication about sex (Parks & Floyd,

1996). Thus, those who were more active on social media could partake in riskier behaviors because of a larger peer network influencing their attitudes and social norms. This was consistent with other studies linking online partnering to a higher likelihood of practicing unprotected anal intercourse (UAI) (Benotsch, Kalichman, & Cage, 2002; Evans, Wiggins, Mercer, Bolding, & Elford, 2007) and a higher probability of being diagnosed with a sexually transmitted infection (STI) (Li, Liu, Zhou, Li, Luo, Li, ... & Xing, 2012; Evans et al., 2007; Elford, Bolding, & Sherr, 2001). On the other hand, sexting appeared to be part of a cluster of risky sexual behaviors among adolescents (Rice, Rhoades, Winetrobe, Sanchez, Montoya, Plant, & Kordic, 2012). The youth emotionally risk themselves with the prevalence of sexting. Some of these images and texts were sent to more than one person and the sharing of this content risks the sender's privacy. Invasion of one's privacy may result in embarrassment that could highly affect the youth's self-presentation (De Graaf, Verbeek, Van den Borne, Meijer, 2018). The risks increased when the youth opted to do the following: not use contraceptives, have multiple and simultaneous sexual partners, and engage in intercourse while under the influence of drugs or alcohol (Gumban, Martos, Rico, Bernarte, & Tuason, 2016). Studies were consistent in saying that sexting was related to unprotected sex (Bryant, Heath, & Carter, 2014; Lehmillier & Ioerger, 2014; Rice et al., 2012; Temple, Paul, Van Den Berg, Le, McElhany, & Temple, 2012).

Given the continuing widespread occurrence of HIV/AIDS infection in the country, studies generally targeted high-risk groups and focused on ways to prevent the epidemic. This comprised predictors to reduce risky sexual behavior and the emerging factor of the online community. And while the offline and online community fosters

communication, identifying and analyzing the networks can ultimately aid the reduction of risky sexual behavior.

## B. Communication Networks and Sexual Behavior

To determine and ascertain the root cause of health issues and evaluate public health interventions, scholars have utilized social research, particularly, Social Network Analysis (Valente & Pitts, 2007). Through their findings over time, it has been confirmed that sexual behaviors carry an inherent risk on health. This type of analysis has contributed to epidemiology, particularly in the medical breakthrough of understanding the spread of the Human Immunodeficiency Virus (HIV) by identifying the networks of sexual contacts. The network-based intervention was found to be more effective and had a wider reach compared to other solutions (Heckathorn, Broadhead, Anthony, & Weakliem, 1999).

### *1. Social Network Paradigm in Studying Risky Sexual Behavior*

The identification and use of network patterns in the social environment of sexually active individuals who are at risk for HIV was proven to eventually help reduce the risk of contracting the virus (Amirkhanian, 2014; Bell, Atkinson, & Carlson, 1999; Ford, Sohn, & Lepkowski, 2002; Jolly, Muth, Wylie, & Potterat, 2001; Latkin, Forman, Knowlton, & Sherman, 2003; Schneerberger, Mercer, Gregson, Ferguson, Nyamukapa, Anderson, Johnson, & Garnett, 2004; Perisse & Nery, 2007; Ennett, Bailey, & Federman, 1999; Rice, 2010; Pilowsky, Hoover, Fuller, Ompad, Andrews, De Leon, Hoepner, Xia, & Latkin, 2007; Tobin, Yang, Sun, Spikes, & Latkin, 2014). There were studies that focused on men who have sex with men (MSM), a community where HIV has been

prevalent (Amirkhanian, 2014; Schneeberger et al., 2004; Peterson, Rothenberg, Kraft, Beeker, & Trotter, 2008; Zhang, Zhu, Wu, Pang, Zhang, Li, Yu, Yang, Zhang, & Wang, 2009; Amirkhanian et al., 2003; Lau, Tsui, & Lau, 2013; Amirkhanian et al., 2005; Tobin et al., 2014) and found that network properties such as centrality helped in increased condom use (Amirkhanian et al., 2003; Lau et al., 2013; Zhang et al., 2009) and decreased unprotected sexual intercourse (Amirkhanian et al., 2005). Centrality measured the most distinguished actors in the social network who were positioned in the center (Zhang, 2010; Freeman, 1978). To achieve safer sexual practices, those who had high centrality scores and were deemed leaders in the network attended intervention programs that taught them to effectively and efficiently give advice on risky sexual behavior reduction and to encourage protected sexual intercourse; they were trained to educate their network members on AIDS knowledge and condom use. It was through this approach that social influence in a network impacted the behavior of its network members.

There were some who have directly addressed the issue by observing and mapping out the structure of a particular community's romantic and sexual network and its components (Bearman, Moody, & Stovel, 2004; Ford et al., 2002). Through this method, researchers found the sexual mixing patterns (Ford et al., 2002) of the youth sample and how they selected sexual partners (Bearman et al., 2004). On the other hand, identifying the youth's perception of sexual behavior according to their peers was also deemed useful (Black, Schmiede, & Bull, 2013); the youth's actual behaviors were not directly assessed as compared to previous studies. In this case, the youth was inclined to over report the risky sexual behavior of their peers, connoting that they think their friends were riskier than in actuality (Black et al., 2013).

On account of the fact that the study of the youth's social network when it comes to risky sexual behavior is health-related, literature also alluded to the collection of data through health clinics (Jolly et al., 2001). Network structure was established from this data and conclusions were made about the spread of STIs in those networks. This approach was more focused on how to prevent the proliferation of the infection among the uninfected social connections of the ones already infected, and to pinpoint the root cause of the spread; notwithstanding this approach, the current study immersed more on the dynamics of information-sharing in the risky sexual behavior social networks of the youth in order to reduce these behaviors.

The exchange or flow of information is a significant factor in social networks (Moolenaar & Daly, 2012), and the identification of how this exchange worked in the social networks of sexually active, young individuals was found to also help in effectively designing sexual risk prevention interventions. Through this, one would have a better understanding of the people with whom individuals communicate about sex and sexual health. Literature has pointed to the observation of interaction among network members as a technique in reducing risky sexual behavior by identifying who they discussed sex with, how the information flowed amongst them, and who facilitated the communication more in the network (Sivaram, Johnson, Bentley, Go, Latkin, Srikrishnan, Celentano, & Solomon, 2005; Guzmán, Schlehofer-Sutton, Villanueva, Stritto, Casad, & Feria, 2003; Kohler, Behrman, & Watkins, 2007; Latkin et al., 2003). Typically, this information was gathered by means of a survey or interview.

## 2. *Network Predictors of Risky Sexual Behavior*

Mapping the network of sexually active individuals at risk for HIV resulted in the discovery of HIV transmission among them (Amirkhanian, 2014). Network attributes, or lack thereof, were found to predict sexual behavior (Smith, Grierson, Wain, Pitts, & Pattison, 2004, as cited in Amirkhanian, 2014). The following content outlines these attributes:

*Network size.* The number of persons included in an individual's sexual intercourse social network was one of the most sought-after network properties when studying risky sexual behaviors (Hill & Dunbar, 2003). Generally, the larger the network, the higher the likelihood of risky sexual behavior to occur (Amirkhanian, 2014; Latkin et al., 2003; Schneeberger et al., 2004; Dorsey, Scherer, & Real, 1999; Martino et al., 2011; Neblett, Davey-Rothwell, Chander, & Latkin, 2011). This was attributed to how bigger networks made it more challenging for its members to receive information on risky sexual behavior prevention (Latkin et al., 2003). Conversely, a small and scattered network allowed for chlamydia to remain endemic and not proliferate (Jolly et al., 2001).

*Network closeness.* How emotionally intimate network members are (Social Network Analysis, 2011), or network closeness, was found to be positively associated with sexual behavior, in that the closer the network members were, the more they engaged in risky sexual behavior (Rocha, Liljeros, & Holme, 2010; Perisse & Nery, 2007; Holman & Sillars, 2011). In other studies, connectivity within a network strengthened the likelihood of transmission of STIs (Amirkhanian, 2014; Dorsey et al., 1999). In spite of this, it was possible that closeness may have actually reduced the likelihood of engagement in risky sexual behavior depending on the characteristics of the

youth being studied. Ennett et al. (1999), Tyler (2013), Tyler (2008), and Tucker, Hu, Golinelli, Kennedy, Green, and Wenzel (2012) found inverse associations between network closeness and risk behaviors such as having numerous sex partners.

*Network homophily.* The homogeneity in characteristics between network members was established to impact the youth's engagement in risky sexual behaviors (Smith et al., 2004, as cited in Amirkhanian, 2014; Martino et al., 2011; Tucker et al., 2012; Tyler, 2008). In these studies, it was prevalent that some of the individuals were associated with having a higher risk in contracting sexually transmitted infections (STI) because they were involved in other risky behavior such as drug and alcohol use (Bell et al., 1999; Latkin et al., 2003; Ennett et al., 1999; Pilowsky et al., 2007; Martino, Tucker, Ryan, Wenzel, Golinelli, & Munjas, 2011; Kipke, Unger, O'Connor, Palmer, & LaFrance, 1997). The youth's behavior was found to be affected by network members who exhibited risky behavior (Martino et al., 2011; Kipke et al., 1997).

*Network density.* Literature presented varying conclusions when it came to relating network density with risky sexual behavior, but it appeared to be minimal compared to studies on substance use (Lakon, Ennett, & Norton, 2006). A positive association between the two concepts was found (Smith et al., 2004, as cited in Amirkhanian, 2014; El-Bassel, Gilbert, Wu, & Chang, 2006; Neaigus, Friedman, Goldstein, Ildefonso, Curtis, & Jose, 1995; Latkin, 1995), where a more dense or cohesive network related to higher engagement in risky sexual behavior. On the other hand, other literature found a weaker (Wang & Muessig, 2017; Latkin, Kuramoto, Davey-Rothwell, & Tobin, 2009) or less dense (Rice, 2010) network to be associated with RSB. Despite the variance in literature, the current research attempted to determine

whether network density positively and significantly influenced individuals' reduction of risky sexual behaviors.

*Network Centrality.* Network centrality was identified as a significant factor that influenced behavior (Amirkhanian et al., 2003; Smith et al., 2004, as cited in Amirkhanian, 2014; Amirkhanian et al., 2005; Lau et al., 2013; Zhang et al., 2009); in every network, there were opinion leaders—'trend setters' who influenced the behavior and actions of others in the network. It was recurrent in literature that in reducing risky sexual behavior among the youth, centralities played an important role in diffusing risk-reducing information that encouraged safer sex and sexual norms (Amirkhanian et al., 2003; Lau et al., 2013; Zhang et al., 2009; Amirkhanian et al., 2005). While this was essential to understanding the impact of social networks in the youth's risky sexual behavior, the current study did not look into it as it only asked for the participation of the principal individuals in the network, commonly referred to in social network studies as the 'ego'; the study did not interview the network members (or 'alters') of the respondents. The researchers only deemed it necessary to discuss network centrality as an important network attribute given its frequency in the existing body of literature surrounding risky sexual behavior among the youth.

### C. Synthesis

Local studies on risky sexual behavior principally focused on the prevention of HIV and AIDS, given its rise in annual cases in the country. Consequently, studies have targeted high-risk groups or key populations, largely on sex workers. Literature on these

typically cited specific sexual health risk behaviors such as condom use and substance use.

The most consistent predictors of risky sexual behaviors were demographic and behavioral variables. Focusing only on those used in the study, literature stated age, sex, educational attainment, and income as the individual variables predicting risky sexual behaviors. While for belief variables, religiosity and self-efficacy were found to be the protective factors against risky sexual behaviors.

An emerging factor is social media, given its wide local adaptation. Literature suggests its influence as both a source of risk and risk mitigation on sexual behaviors.

Social network studies typically focused on lessening risky sexual behaviors. Studies have targeted the youth, more so on their health-related behavior. Literature on these typically cited clinical and intervention studies.

Social network predictors of risky sexual behaviors include network size, network closeness, network homophily, network density, and network centrality. Literature has targeted these attributes and has focused on risk-reducing interventions using them.

#### D. Gaps in Research

Literature on risky sexual behavior and social networks have yet to touch up on a few central themes. Local studies were only limited to the key population groups, and literature failed to report more about an emerging high-risk group—the youth. These studies focused on specific behavioral variables such as condom use, which may not suffice to define the concept of risky sexual behaviors as a whole. Further gaps on local

studies could use social media or media use in general, given social media's local embrace.

Social network studies generally remarked on prevention of infections, and not so much on the prevention of unwanted pregnancies. Consequently, their research designs fell under clinical and intervention studies. Further, they are Western, which made social network studies limited in their context. Local studies can adapt previous literature on risky sexual behavior to come up with a more comprehensive understanding of the Filipino youth's sexual behaviors and their social circle on this.

### III. STUDY FRAMEWORK

The Social Network Theory best informed the study in understanding the relationships the Filipino youth formed and cultivated to avoid risky sexual behaviors. This section of the paper expounded on the Social Network Theory, its background and concepts, and its translation into the measures needed for this study to come to fruition.

#### A. Theoretical Level

The Social Network Theory (SNT) looks into the relationships people build and how these relationships influenced their behavior and opinion (Cavendish et al., 1998; “Network Theory and Analysis”, n.d.; Kadushin, 2004). Compared to classic social research approaches, this theory takes into consideration the contexts in which people are embedded in (Zhang, 2010). Network analysts believe that how an individual behaves is highly influenced by their web of social connections; these connections oftentimes contribute to a person’s behavior more than his or her personal agency (Cavendish et al., 1998; Wetherell et al., 1994, as cited in Zhang, 2010). Hence, SNT is more concerned with the characteristics of relationships than the personal characteristics of individuals. Through this theory, the analysis of patterns within social entities can help determine the success or failure of groups or organizations. In addition, Social Network Analysis (SNA) is vital in understanding how groups solve problems and “the degree to which individuals succeed in achieving goals” (Zhang, 2010, p. 4).

The subject of this theory, social network, refers to a set of actors called “nodes” linked or tied together in one or many ways (Wasserman & Faust, 1994, as cited in Scott & Carrington, 2011). These nodes pertain not only to individuals, but also to families, organizations, or even nations that are related to each other (Zhang, 2010; Scott and

Carrington, 2011). The individuals connected to a single node are called alters, and that particular node is called the ego.

The relations which nodes possess are called “ties” or “links” that can either be direct or indirect (Zhang, 2010). The former expresses a connection from the initial to the final node; the latter connotes a link but direction between the nodes does not matter (Zhang, 2010). Through these relationships, a sharing or flow of information takes place (Moolenaar & Daly, 2012; Bunquin, 2018). These elements of a network are fundamental because they quantify an individual’s position in a network and this position, to a certain degree, identifies his/her opportunities, constraints, and future characteristics (Borgatti et al., 2009). Thus, the importance of people in a network varies (Sih et al., 2009). The various ways in which nodes are tied and the patterns they follow are used to predict different network properties, and such is the goal of the theory (Borgatti, Mehra, Brass, & Labianca, 2009). Looking at these patterns as a whole illustrates a network’s structure. As Zhang (2010) points out, “SNA is grounded in... relational, or network data” (p. 1) to identify and unearth the relationship between individuals. The development of individuals’ social relations allows for a “strength in ties” (Rogers & Kincaid, 1981, as cited in Dunn, 1983) that lead to the formation of more organized and informed decisions.

SNT was formed through the influences of sociology, mathematics, and computer science, but foundational to this theory are sociologists Georg Simmel, Emile Durkheim (Zhang, 2010; Basics of Social Network Analysis, 2017), Max Weber (Basics of Social Network Analysis, 2017), and Ferdinand Tonnies, who pioneered the interest for structures in human behavior starting from the 1800s (Zhang, 2010). For Tonnies,

individuals are linked in social groups wherein they share values and/or beliefs that are instrumental to themselves. On the other hand, Durkheim believed that social phenomena were a result of a shared reality that individuals cannot compose on their own. George Simmel was deemed the first person to philosophize in a social-network way. He studied network size and interaction back in the early 1900s (Zhang, 2010). Psychiatrist Jacob Levy Moreno was also a notable contributor to the school of thought of Social Network Analysis. Some even ascribed its foundation to him (Freeman, 2004, as cited in Basics of Analysis, 2017; Zhang, 2010). He studied sociometry, and his involvement in the 1992 epidemic of runaways from the Hudson School for Girls in the United States was a breakthrough in the field of social network research (Borgatti, et al., 2000). The end of 1970 marked the time when SNA was universally recognized by social science researchers and since then, SNA has been expanding and flourishing in numerous fields.

Graphic imagery is essential to SNA (Zhang, 2010); it is through this that the social structure of relationships can be illustrated. The basic premise of SNA is that social structure matters (Borgatti et al., 2009; Sih, Hanser, & McHugh, 2009). The theory “looks into the individual’s social environment for explanations” (Borgatti et al., 2009, p. 894) through patterns of communication (Hinde, 1976; Whitehead, 1997).

There is a variety of social network graphs depending on the type of network studied. Looking at the connections formed in a set of similar nodes gives us a one-mode network. On the other hand, a two-mode network examines the connections between two sets of nodes (Zhang, 2010). Another approach in studying the type of network is by looking at its local circumstances. If the connections being observed are part of a single, closed community, this is referred to as a whole or socio-centric network. It is also a

“bird’s-eye view” (Scott & Carrington, 2011, p. 19) of looking at the community. Under different conditions where the connections examined are directly surrounding the ego, the network is personal or ego-centric (Zhang, 2010). Typically, to analyze ego-centric networks, the trend is to sample a sizable number of egos and the people part of their network (Scott & Carrington, 2011). In this particular study, ego-centric networks were analyzed.

The study of network structure is broken down into network properties that can explain its outcome. In evaluating the Filipino youth’s social networks in relation to, or lack thereof, their risky sexual behaviors, the research sought to ascertain what about their network’s size, closeness, homophily, and density influenced their behavior.

Network size often times characterizes social network (Hill & Dunbar, 2003); for Scott & Carrington (2011), this network property is the maximum number of nodes that are one-step links of the ego.

Network closeness explains the extent to which a node is in close proximity with other individuals in a network graph (Social Network Analysis, 2011). Essentially, it is how emotionally intimate network members are. It is also a measure of a node’s ability to have access to goods or information (Social Network Analysis, 2011).

Network density illustrates the level of connectedness of the nodes in a network (Zhang, 2010). It is SNA’s measure of network cohesion, and graphically, it is delimited as the number of connections or ties in a network (Kadushin, 2004; Social Network Analysis, 2011).

Network homophily highlights the nodes’ similarity in one or more characteristics or behavior (Borgatti et al., 2009; Kadushin, 2004; Aiello, Barrat, Schifanella, Cattuto,

Markines, & Menczer, 2012; Denny, 2014). In a network, individuals are considered to have high homophily when their characteristics are more similar than expected. Nodes can be homophilous if they encounter common circumstances and norms or if they act in the same field (Feld & Carter, 1998, as cited in Kadushin, 2004). It is posited that two nodes will more likely connect as a result of high homophily, and nodes that are highly homophilous are inclined to have commonalities in attitudes (Kadushin, 2004).

These concepts were the network properties or attributes that this research focused on, as the current study was centered on personal or ego-centric networks. Thus, the common network variables that describe this type of network were used. Network size is a prominent network property examined in studies on risky sexual behavior social networks. For network closeness, the study sought to identify if the Filipino youth's level of closeness with their network members affected what they know about RSB and how they share these information with each other. Since the study focused on the relationship of the Filipino youth's risky sexual behavior with their social network, homophily was chosen to identify the similarity of the ego and alters' opinions regarding the subject and how this influenced the ego's behavior. Finally, network density was included to find out how connected and cohesive the Filipino youth are with their risky sexual behavior social networks. Other network properties that are unique to socio-centric networks were not included.

## B. Conceptual Level

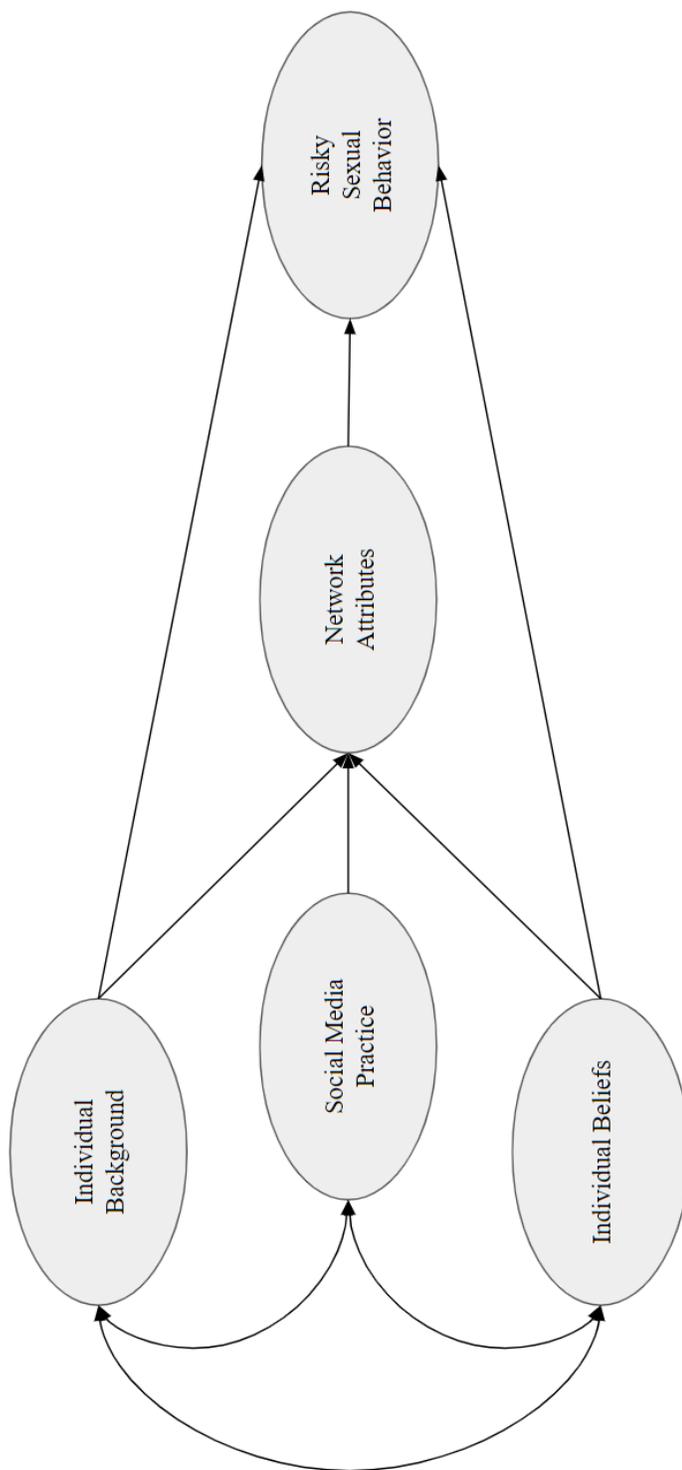
These characteristics of the Social Network Theory were translated to create concepts that fit in understanding the relationship between the Filipino youth's risky

sexual behavior social network and their risky sexual behaviors. Before assessing this, the researchers first determined the background of the youth, their beliefs, and their social media practice. These were incorporated to provide an interpretation of the ego. Notably, the background of the youth was defined by their demographic characteristics, and this included their age, sex, educational attainment, and household income. Furthermore, their individual beliefs were included in addition to their background to give us a glimpse of their personal agency through their religious orientation or religiosity and their general belief in their own capabilities or self-efficacy in relation to risky sexual behavior. Their social media practice also played a role in their social networks, where a positive association was observed between the two variables. Literature has identified this association as significant, and it was included in the study to conclude whether in this context, the same result is to be expected.

According to numerous studies, these individual variables are predictors of risky sexual behavior. However, looking into its relationship with one another might give further insights into the role that it plays. Literature also points to these individual variables' influence on their social network's characteristics, such that they describe the properties of social networks and possibly predict how it changes.

The Filipino youth's risky sexual behavior social network was linked to their performance of said behavior, in a way that the network determines the likelihood of the youth to engage in risky sexual behaviors. Thus, this informs their probability of coming across RSB's consequences, such as unexpected pregnancy and/or contraction of sexually transmitted infections, and how it can be avoided. These, too, played a major role in predicting RSB more so than looking solely at their individual background and beliefs.

The researchers determined how it altogether affected their risky sexual behavior. The relationships formed determined the significance each variable had on the reduction of risky sexual behavior.

Figure 1. *Conceptual Model*

### C. Operational Level

To measure and find associations between the risky sexual behavior of the Filipino youth and their social networks, the above mentioned concepts were further specified into the following:

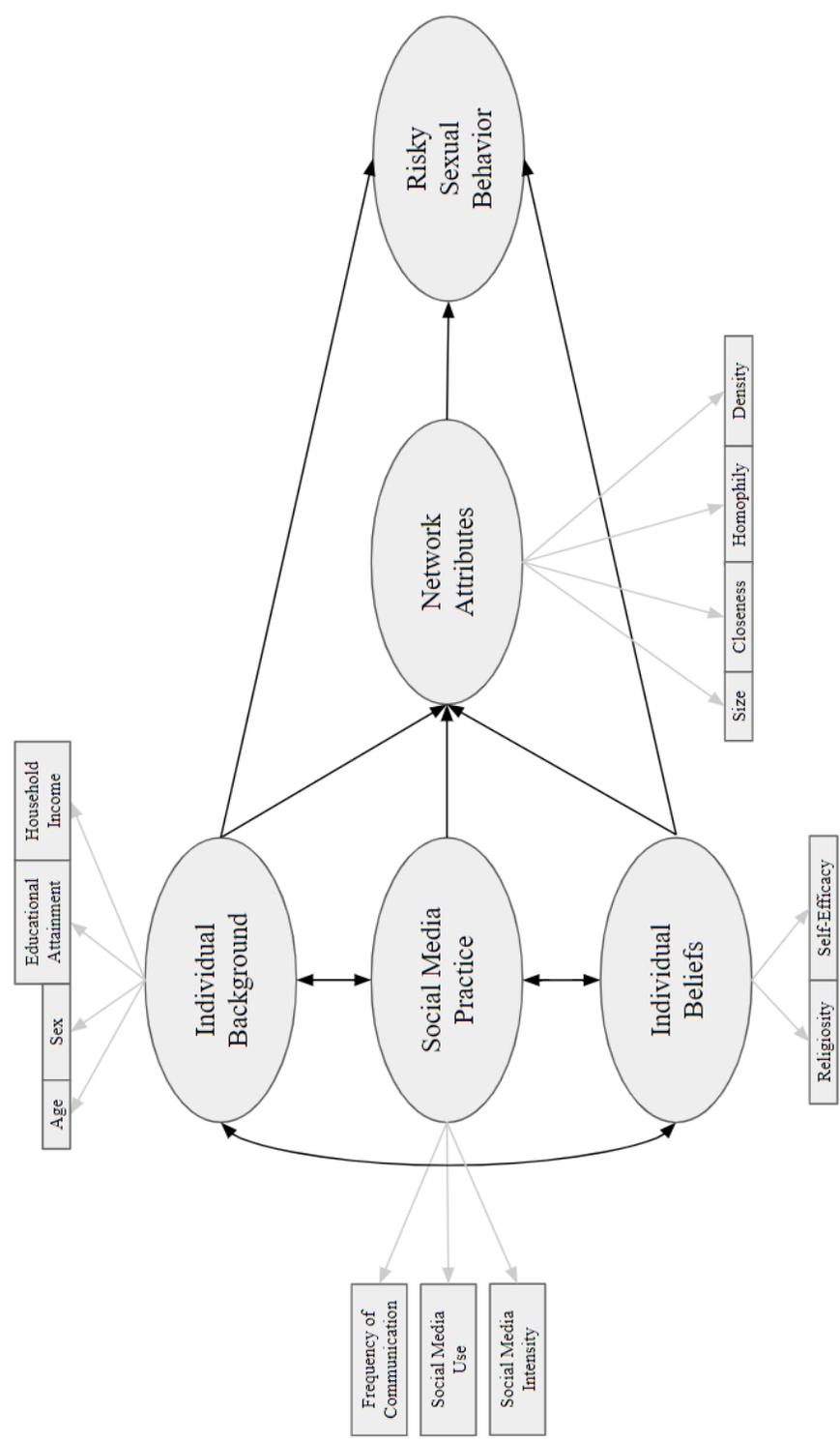
The respondent's individual background was determined using measures for age, sex, educational attainment, and household income. For age, the respondents were asked to disclose their age last birthday. Sex was measured as the respondents' biological sex: male or female. Respondents were provided with categories to choose from for educational attainment and household income. Such categories stemmed from calculations from the 2012 Family Income and Expenditure Survey. Social media practice was operationalized in three ways. Firstly, it was measured as the respondent's frequent online communication with network members regarding topics on risky sexual behavior. Secondly, it also measured his/her social media use and number of hours spent actively using it in a day. Thirdly, his/her social media intensity was also measured using a modified Facebook Intensity Scale (Ellison, Steinfield, & Lampe, 2007).

Religiosity and self-efficacy were the individual beliefs measured in this study. Numerous literature on risky sexual behavior found these concepts to be predictors of such behavior (Langer, et al., 2001; Zaleski & Schiaffino, 2000; Abebe, et al., 2013; Landor, et al., 2011; Sionéan, et al., 2002; Thomas & Jason, 2000; Wiener, et al., 2007; Bandura, 1994; Dilorio, et al., 2001; Kasen, et al., 1992; Carvajal, et al., 1999; Jemmott, et al., 1992; Santelli, et al., 2004). Religiosity was measured using McCree et al.'s (2003) religiosity scale as the scale was applicable to all kinds of religion in contrast with other scales that only applied to Catholics. Hence, this gave a more inclusive take on religion.

A modified General Self-Efficacy Scale (GSE) measured self-efficacy for this study. Rather than focusing on individuals' self-efficacy towards a particular behavior, a generic scale was utilized to fit the study. The Social Network Theory can be implemented by means of measuring different network attributes and their interaction with one another and the ego. For this particular study, the network size, network closeness, network homophily, and network density of the respondents' social networks were used and identified.

Concepts from the Theory of Planned Behavior were adapted to operationalize risky sexual behavior: intention to perform behaviors, attitudes towards behaviors, and subjective norms about behaviors (Rye, Fisher, and Fisher, 2001). Respective scales from the same literature were utilized for each concept (Rye et al., 2001).

Figure 2. *Operational Model*



#### D. Analytical Level

This analytical framework shows the different relationships comprising the study. It presents the linearity between the background, belief, and social network variables towards the variable of risky sexual behavior, proposing a causality in the relationship.

The study proposed that an individual's background interrelates with their belief. Analysis of individual background characteristics and individual belief showed support to this link. The belief variable religiosity as well as self-efficacy were found to be connected with the specific background variables: age, sex, educational attainment, and income.

Studies found several measures of religiosity varied according to age, sex, educational attainment, and income. When it comes to age, findings have indicated a positive age relationships for church attendance (Nelsen & Nelsen, 1975; Stump, 1987) and having a religious affiliation (Taylor, 1988; Welch, 1978). Argue, Johnson, and White (1999) found a significant, non-linear increase in religiosity with age, with the greatest increase occurring between ages 18 and 30. Developmental studies assumed religious attitudes and behaviors develop over time and may be influenced by different factors at different stages of the life course (Dillon & Wink, 2007; Wink & Dillon, 2002). With respect to sex differences, numerous studies presented a significant relationship between sex and religiosity (Breitner, Wyse, Anthony, Welsh-Bohmer, Steffens,...& Norton, 1999; Levin & Taylor, 1993; Maselko & Kubzansky, 2006; McCullough, Hoyt, Larson, Koenig, & Thoresen, 2000; Wolfinger & Wilcox, 2008), indicating greater religious involvement among women (Argyle & Beit-Hallahmi, 1975; Bengtson, Kasschau, & Ragan, 1977; Blazer & Palmore, 1976; Cornwall, 1989; de Vaus &

McAllister, 1987; Koenig, Kvale, & Ferrel, 1988; Levin & Taylor, 1993; Levin et al., 1994; Taylor, 1992). Literature has also found a significant association between educational attainment and religiosity, particularly with their educational success (Clark, Brooks, Lee, Daley, & Crawford, 2006), educational expectations (Regnerus, 2003), total years of schooling (Loury, 2004; Lehrer, 2004), test scores (Jeynes, 2003; Regnerus, 2003), and their cumulative grade point averages (Walker & Dixon, 2002; Zern, 1989). Finally, income was also found to be associated with religiosity in that people with lower incomes have been found to seek spiritual comfort and support for personal problems on a more frequent basis than their higher income counterparts. These differences suggested that limited financial resources have an impact on one's help-seeking and coping behaviors. It was likely that persons with low incomes used religious coping for personal problems because these strategies can be employed by the individual (e.g., prayer, devotional practices) (Taylor, Mattis, & Chatters, 1999).

On the other hand, when it comes to self-efficacy, studies also found several measures of self-efficacy varying according to age, sex, educational attainment, and income. For self-efficacy, increasing age (Chyung, 2007; Clark, 1995, 1996; Clark, Patrick, Grembowski, & Durham, 1995; Maddox & Clark, 1992.), lower education (Gecas, 1989), and lower income (Clark, 1995, 1996; Clark, Patrick, & Gecas, 1989; Grembowski & Durham, 1995; Maddox & Clark, 1992; Patrick & Grembowski, 1992; Grembowski et al., 1993) were found to be associated with lower self-efficacy. However, when it comes to sex, studies were inconclusive on what sex associates more to self-efficacy, and this also depended on what type of self-efficacy is being examined. For example, for academic self-efficacy, females were reported stronger language arts self-

efficacy (Huang, 2012), computer self-efficacy (Rovai & Baker, 2005), science self-efficacy (Britner & Parajes, 2001), and overall academic self-efficacy (Chyung, 2007), while some studies found males to have stronger mathematics, computer, and social sciences self-efficacy (Huang, 2012). Further, Junge and Dretzke (1995) found that females reported stronger self-efficacy expectations on only a few items that involved stereotypical female activities.

Measures for individual background were tested for significant relations with the measures for social media practice. According to the 2013 Young Adult Fertility and Sexuality Study (YAFS 4), wherein 58.9% of the Filipino youth had used the internet, somewhat more among females (61%) than males (57%), and the younger (60%) more than the older (57%) cohort. Further, 80.3% of the users reported using it for social networking and similarly, females had a somewhat higher internet prevalence (84%) than males (76%).

Scales to measure individual beliefs such as religiosity and self-efficacy were linked with social media practice as well. Specifically, religiosity was found as a potential predictor of internet activity (Armfield, & Holbert, 2003). This may be apparent as the media has become an important, if not primary, source of information about religious issues, and religious information (Hjarvard, 2011). Interactive media may provide a platform for the expression and circulation of individual beliefs.

Correspondingly, social media provides a platform for discussions and community-building among people with similar religious orientation (Hjarvard 2008). According to Carey (1992), the media also serves a cultural function by creating and sustaining communities. As a cultural and social environment, the media took over many of the

cultural and social functions of the institutionalized religions and provided spiritual guidance, moral orientation, ritual passages and a sense of community and belonging (Hjarvard 2008). Studies also explicated that online religious identities and practice are an extension of the offline conditions and relations (Campbell & Lövheim, 2011; Campbell, 2012; Lövheim, 2012).

When it comes to self-efficacy, studies showed varying instances of the interplay between self-efficacy and social media practice. Wang J., Jackson, Wang H., & Gaskin (2015) found that self-efficacy predicted social networking sites (SNSs) depending on its use. They found that self-efficacy was a significant predictor of SNS's social function as well as its recreational function. Park, Oh, and Kang (2012) also found that self-confidence about uploading content and having the intellectual resources needed to participate in online encyclopedia editing was positively related to intentions to upload content to Wikipedia. DeAndrea, Ellison, LaRose, Steinfield, & Fiore (2012) discovered that Facebook usage increased social support perceptions for college adjustment and Hong, Hwang, Szeto, Tsai, Kuo, & Hsu (2016) found that self-efficacy and learning interest were positively correlated to learning satisfaction through YouTube.

All of the measures used in each concept were linked to determine the interplay between these characteristics of the network ego and his or her social network. The predictors of risky sexual behavior presented a relationship with the ego's social network attributes according to literature. Age, one of the individual background characteristics chosen to be studied, was found to have a positive relationship with network properties. In one study, it was linked with network homophily (Singla & Richardson, 2008). Moreover, it has also been linked with network size, being associated with a larger

network (Neblett et al., 2011). However, other studies have found the opposite—as individuals aged, their social network began to grow smaller but more close-knit (Fung, Carstensen, & Lang, 2001; Marsden, 1987; Huxhold, Fiori, & Windsor, 2013).

Sex was also a significant predictor of social network properties. Discrepancies have been observed between males and females when comparing the structure of their social networks. Males tended to receive information from network members about HIV prevention less than females do (Latkin et al., 2003). Findings also pointed to sex as a function of network size (Kaplan & Hartwell, 1987; Ibarra, 1993; Lin, 2000; Campbell & Rosenfeld, 1985), where in particular circumstances, the environment in which networks are a part of provided challenges for females which resulted in a difference with the networks of their male counterparts (Ibarra, 1993). Males and females' social network was also found to vary in terms of network member composition, in that the males' networks consisted of less family relatives compared to females'. The latter were also found to maintain closer ties with their network (Moore, 1990).

A relationship was also found between educational attainment and network attributes (Fischer, 2009; Gang & Zimmermann, 2000; Lai, Lee, & Leung, 1998). For Fischer (2009), a higher educational attainment was an indicator of smaller network size. This is in contrast with Gang and Zimmermann (2000), who posited that educational attainment and network size were positively related.

Network ties were argued to affect the income earned by individuals, particularly Mexican migrants (Amuedo-Dorantes & Mudra, 2007), and the association between this background characteristic and network attributes was taken into account in this study. Dominguez and Arford (2010) similarly found a connection between the two variables,

where low income was associated with smaller ties. They attributed this to how those living below the poverty threshold are socially isolated and are not connected to any alters from working or middle-class income brackets who are “key sources of information about access to employment” (p. 116). For Kawachi, Kennedy, Lochner, & Prothrow-Stith (1997), income inequality amongst individuals led to lower social cohesion and hence, resulted in a less dense network.

Aside from individual background characteristics, a relationship was also established between network attributes and individuals’ social media practice. The current study attempted to establish a connection between the two variables as well. Social media practice was broken down into concepts of social media use, frequency of online communication, and social media intensity. Social media use influenced social networks, particularly affecting social network size (Hampton, Sessions, & Her, 2011; Boulianne, 2015; Steinfield et al., 2008; Hampton, Livio, & Sessions Goulet, 2010; Horrigan, Boase, Rainie, & Wellman, 2006). Individuals also grew closer and thus incurred higher network closeness scores through online communication (Pollet, Roberts, & Dunbar, 2011). More frequent communication online was also significantly associated with better network scores (Burke & Kraut, 2014; Neubaum & Krämer, 2015). Furthermore, frequent usage of social media platforms, particularly Facebook, determined the significance of said platform to an individual, as a result of the Facebook Intensity Scale created by Ellison et al. (2007). The individual’s online social circle was linked with the importance placed upon Facebook.

Literature has supported the influence of religiosity on network attributes, illustrating the existence of a positive link between them (Thomas, 2008; Colleran &

Mace, 2015; Rivera-Hernandez, 2016; Fukui, Starnino, & Nelson-Becker, 2012). This is contradicted by Woods, Lentz, Mitchell, and Oakley, 1994 who found disagreeing results between religiosity and network size; low religiosity was attributed to conflicting network sizes in females. Network density, on the other hand, was discovered to be correlated with religiosity, although the association was of minor importance given that the correlation was not that high (Schafer, 2014). When it comes to network homophily, Porter and Emerson (2013) and Ben-Nun and Levitan (2011) found that religiosity interacted with the social network heterogeneity of a group. People in this circle were implied to have more diverse network members in their network.

In different contexts, self-efficacy was positively linked with social network attributes; together with social support, it was found to be helpful in preventing depression (Holahan, C. K. & Holahan, C. J., 1987) and in gaining social trust (Wu, Wang, Liu, Hu, & Hwang, 2012). Valente, Hoffman, Ritt-Olson, Lichtman, and Johnson (2003) used social networking as a group assignment strategy for students and found that it led to improved self-efficacy. Moreover, positive health behavior amongst students was promoted as a result of self-efficacy and social support networks (Kim, Cho, Ra, & Park, 2008). Siciliano (2016) was able to connect social network density with self-efficacy in schools and observed that schools with denser social networks have higher collective self-efficacy than less dense schools. These studies indicated an established interdependence between an individual's personal beliefs and his or her social network's characteristics.

Showing a linear causality, this study proposed background, belief, and social media network variables as predictors of risky sexual behavior. When it comes to an

individual's background, studies have indicated the older individuals (Belgrave et al., 2000; Klein et al., 1993; Ludwig & Pittman, 1999; Shorey et al., 2015; Sun et al., 2013), and the lower their socioeconomic status (Brook et al., 2006; Brown et al., 2006; Peterson et al., 1992) predicted riskier sexual behavior. Findings for sex were mixed, whether male predicted higher risk (Belgrave et al., 2000; Fentahun & Mamo, 2014; Klein et al., 1993; Lewis et al., 2007; Locke et al., 2005; Luder et al., 2011; Ludwig & Pittman, 1999; Shearer et al., 2005) or female were at higher risk (Brown et al., 2006; Sun et al., 2013; Temple et al., 2012; Wingood et al., 2001; Yi et al., 2018). Educational attainment was also supported by literature stating a significant association between the two (Brook et al., 2006; Brown et al., 2006; Peterson et al., 1992).

Studies have also indicated belief variables to predict risky sexual behavior. A large volume of studies suggested that religious belief was an important protective factor for reducing risky sexual behavior (Abebe et al., 2013; Landor et al., 2011; Langer et al., 2001; McCree et al., 2003; Zaleski & Schiaffino, 2000) while a large number of studies have also established self-efficacy as an important protective factor for reducing risky sexual behavior (Bandura, 1994; Carvajal et al., 1999; Dilorio et al., 2001; Kasen et al., 1992; Santelli et al., 2004; Sionéan et al., 2002; Thomas & Jason, 2000; Wiener et al., 2007). Ultimately this informed whether the network egos' risky sexual behavior was reduced as a result of their risky sexual behavior social network, which was measured through the network properties of size, closeness, homophily, and density as informed by studies. Literature highlighted the connection between network size and risky sexual behavior, where an increase in the network size of individuals led to an increased

potential in performing risky sexual behaviors (Amirkhanian, 2014; Latkin et al., 2003; Schneeberger et al., 2004; Dorsey et al., 1999; Martino et al., 2011; Neblett et al., 2011).

Contrarian findings were observed when it came to the influence of network closeness towards risky sexual behavior. On one hand, as network members grow closer, they became riskier with sexual practices (Rocha et al., 2010; Perisse & Nery, 2007; Holman & Sillars, 2011). Inversely, network closeness was also found to reduce risky sexual behavior (Ennett et al., 1999; Tyler, 2013; Tyler, 2008; Tucker et al., 2012). Focusing on the Filipino youth, the study identified whether network closeness was useful or detrimental to the reduction of risky sexual behavior.

The homogeneity in characteristics between the network ego and his or her alters contributed immensely with the kind of behavior the network ego will perform. Literature has shown its adverse effects in risky sexual behavior, whereupon network members who enacted risky sexual behavior influenced the ego's personal behavior, causing him or her to become riskier in sexual practices (Smith et al., 2004, as cited in Amirkhanian, 2014; Martino et al., 2011; Tucker et al., 2012; Tyler, 2008; Kipke et al., 1997).

In the case of network density, literature has shown that a denser network was linked with an escalated potential in being risky with sexual behaviors (Smith et al., 2004, as cited in Amirkhanian, 2014; El-Bassel et al., 2006; Neaigus et al., 1995; Latkin, 1995). Whether the same relationship will be observed with the Filipino youth was determined by the current study.

### E. Operational Definition of Terms

1. *Alter* - individuals identified by the respondent as a discussant of sexual information
2. *Attitudes* - the respondent's evaluation of how good or bad a particular sexual behavior was
3. *Ego* - the respondent of the study
4. *Frequency of online communication* - how often the respondent discussed risky sexual behaviors with his/her network online
5. *Intention* - the respondent's inclination to perform a particular sexual behavior
6. *Network closeness* - the respondent's perceived level of intimacy with his/her network
7. *Network density* - the extent to which the network alters were tied to or knew each other
8. *Network homophily* - the degree of similarity in the opinions on risky sexual behaviors between the respondent and his/her network
9. *Network size* - the number of persons included in the respondent's risky sexual behavior network
10. *Nodes* - the set of actors in a network; all of the people present in the network, including the respondent
11. *Subjective norms* - the respondent's perception of whether family and/or peers will encourage his/her conduct of a particular sexual behavior
12. *Religiosity* - how often the respondent engaged in activities that were religious or spiritual in nature

13. *Risky sexual behavior* - the behaviors that were related but not limited to getting STIs (sexually transmitted infections), HIV (human immunodeficiency virus), and unintended pregnancy due to the absence of contraceptives (e.g. condoms, birth control pills, etc.) during sexual intercourse
14. *Self-efficacy* - the extent to which the network ego believed in his/her ability to succeed in achieving a goal or task
15. *Sexual experience* - whether the respondent had any sexual relation/s
16. *Social media intensity* - the extent to which social media was important in the network ego's daily life
17. *Social media practice* - the respondent's social media interactions, namely his/her frequency of online communication with alters, social media use, and the perceived importance of social media in his/her daily life
18. *Social media use* - the respondent's active usage of social media per day
19. *Social network* - the collection of individuals the respondent discussed risky sexual behaviors with
20. *Youth* - Filipino individuals aged 18 to 30 years old; individuals on the stage of emerging adulthood

#### F. Statement of Hypotheses

To explore the objectives of the study, the researchers constructed the following hypotheses concerning the relationships entailed in the framework:

Literature has shown that numerous individual characteristics is linked to one's personal and religious beliefs. Religiosity was found to be linked with age (Argue, Johnson, & White, 1999; Dillon & Wink, 2007; Johnson & White, 1999; Nelsen & Nelsen, 1975; Stump, 1987; Taylor, 1988; Welch, 1978; Wink & Dillon, 2002), sex (Argyle & Beit-Hallahmi, 1975; Bengtson et al., 1977; Blazer & Palmore, 1976; Breitner et al., 1999; Cornwall, 1989; de Vaus & McAllister, 1987; Koenig et al., 1988; Levin & Taylor, 1993; Levin et al., 1994; Taylor, 1992; Levin & Taylor, 1993; Maselko & Kubzansky, 2006; McCullough et al., 2000; Wolfinger & Wilcox, 2008), socio economic status (Clark, 1995, 1996; Clark et al., 1989; Grembowski & Durham, 1995; Maddox & Clark, 1992; Patrick & Grembowski, 1992; Grembowski et al., 1993), and educational attainment (Clark et al., 2006; Jeynes, 2003; Loury, 2004; Lehrer, 2004; Regnerus, 2003; Taylor et al., 1999; Walker & Dixon, 2002; Zern, 1989). Self-efficacy was also found to be linked with age (Chyung, 2007; Clark, 1995, 1996; Clark et al., 1995; Maddox & Clark, 1992), sex (Britner & Parajes, 2001; Chyung, 2007; Huang, 2012; Junge & Dretzke, 1995; Rovai & Baker, 2005) socio economic status (Clark, 1995, 1996; Clark, Patrick, & Gecas, 1989; Grembowski & Durham, 1995; Maddox & Clark, 1992; Patrick & Grembowski, 1992; Grembowski et al., 1993), and educational attainment (Gecas, 1989). Thus, the following hypothesis was formulated:

H1: Respondent's individual background is significantly related to their individual beliefs.

Related literature has found individual background characteristics to be linked to one's social media practice (YAFS 4, 2013). With that, it was hypothesized that:

H2: Respondent's individual background is significantly related to their

social media practice.

It was apparent that one's belief is linked to one's social media practice; specifically, one's religiosity (Armfield, & Holbert, 2003; Campbell & Lövheim, 2011; Campbell, 2012; Carey, 1992; Hjarvard 2008, 2011; Lövheim, 2012) and self-efficacy (DeAndrea et al., 2012; Hong et al., 2016; Park et al., 2012; Wang et al., 2015). It was then hypothesized that:

H3: Respondent's social media practice is significantly related to their individual beliefs.

Numerous studies illustrated the influence of an individual's background characteristics to the characteristics of the social network they possessed. Such background characteristics comprised of individuals' age (Singla & Richardson, 2008), sex (Latkin, et al., 2003; Kaplan & Hartwell, 1987; Ibarra, 1993; Lin, 2000; Moore, 1990; Campbell & Rosenfeld, 1985), educational attainment (Valverde & Vila, 2003; Gang & Zimmermann, 2000; Fischer, 2009, Lai et al., 1998), and household income (Amuedo-Dorantes & Mudra, 2007). It was then hypothesized that:

H4: Respondent's individual background is significantly related to their network attributes.

The social media practice of individuals has been found to positively affect their social network, particularly their social media use (Hampton, Sessions, & Her, 2011; Boulianne, 2015; Steinfield, et al., 2008; Hampton, Livio, & Sessions Goulet, 2010; Horrigan, Boase, Rainie, & Wellman, 2006) and frequency of online communication (Burke & Kraut, 2014; Neubaum & Krämer, 2015). Ellison, et al. (2007) found through the Facebook Intensity Scale (from which the current Social Media Intensity Scale was

adapted from) that more frequent Facebook usage determined the importance of said platform, and this was linked with the individual's Facebook social circle. This finding can be used to determine whether the overall importance of social media to the respondent has a relationship with his or her network. This led to the following hypothesis stating that:

H5: Respondent's social media practice is significantly related to their network attributes.

The personal beliefs of an individual have been associated with his or her social network and its attributes. Particular beliefs that uphold this notion are religiosity (Woods, Lentz, Mitchell, & Oakley, 1994; Thomas, 2008; Schafer, 2014; Porter & Emerson, 2013; Colleran & Mace, 2015; Rivera-Hernandez, 2016; Adamczyk & Felson, 2006; Oates, 2013; Fukui, Starnino, & Nelson-Becker, 2012; Ben-Nun & Levitan, 2011) and self-efficacy (Holahan, C. K. & Holahan, C. J., 1987; Wu, Wang, Liu, Hu, & Hwang, 2012), which affect the size, closeness, homophily, and density of individuals' social networks. That being so, the connection between individual beliefs and network attributes were tested through the following hypothesis:

H6: Respondent's individual belief is significantly related to their network attributes.

Various studies have found various individual characteristics linked to risky sexual behavior. These characteristics include age (Belgrave et al., 2000; Desiderato et al., 1995; Ekstrand & Coates, 1990; Kelly et al., 1995; Klein et al., 1993; Ludwig & Pittman, 1999; Remafedi, 1994; Shorey et al., 2015; Sun et al., 2013), sex (Belgrave et al., 2000; Brown et al., 2006; Fentahun & Mamo, 2014; Klein et al., 1993; Lewis et al.,

2007; Locke et al., 2005; Luder et al., 2011; Ludwig & Pittman, 1999; Shearer et al., 2005; Temple et al., 2012; Wingood et al., 2001; Yi et al., 2018), educational attainment (Brook et al., 2006; Brown et al., 2006; Peterson et al., 1992), and socio economic status (Brook et al., 2006; Brown et al., 2006; Peterson et al., 1992). Thus, it was hypothesized that:

H7: Respondent's individual background is significantly related to their risky sexual behavior.

Literature has demonstrated that the social network of people is directly related to their risky sexual behavior. Moreover, when social network attributes are targeted and utilized, they can help in collectively reducing risky sexual practices (Amirkhanian, et al., 2003; Lau, et al., 2013; Zhang, et al., 2009; Amirkhanian, et al., 2005; Black, et al., 2013). Network attributes that were referred to include network size (Amirkhanian, 2014; Latkin et al., 2003; Schneeberger et al., 2004; Dorsey, et al., 1999; Martino et al., 2011; Neblett, et al., 2011), network closeness (Rocha, et al., 2010; Perisse & Nery, 2007; Holman & Sillars, 2011; Ennett, et al., 1999; Tyler, 2013; Tyler, 2008; Tucker, et al., 2012), network homophily (Smith et al., 2004, as cited in Amirkhanian, 2014; Martino et al., 2011; Tucker et al., 2012; Tyler, 2008; Kipke et al., 1997), and network density (Smith et al., 2004, as cited in Amirkhanian, 2014; El-Bassel, et al., 2006; Neaigus, et al., 1995; Latkin, 1995; Wang & Muessig, 2017; Latkin, et al., 2009). These attributes predicted whether individuals would practice risky behavior or avoid it. Hence, it was hypothesized that:

H8: Respondent's network attributes are significantly related to their risky sexual behavior.

Finally, literature has shown that one's personal belief (Bandura, 1994; Carvajal et al., 1999; Dilorio et al., 2001; Kasen et al., 1992; Santelli et al., 2004; Sionéan et al., 2002; Thomas & Jason, 2000; Wiener et al., 2007), as well as their religious beliefs (Abebe et al., 2013; Landor et al., 2011; Langer et al., 2001; McCree et al., 2003; Zaleski & Schiaffino, 2000) were linked to their risky sexual behavior. Thus, it was hypothesized that:

H9: Respondent's individual belief is significantly related to their risky sexual behavior.

## IV. METHODOLOGY

This chapter details and explains the design of the study, including the overall scheme and plan in data collection and analysis to achieve the objectives of the research.

### A. Research Design and Methods

The study focused on the risky sexual behavior social network of the Filipino youth, mainly on how it affected their actual risky sexual behavior. To assess that, a quantitative research design was employed. A combination of a self-administered and interviewer-administered questionnaire was conducted for data gathering.

According to Borgatti, Everett, and Johnson (2013, as cited in Bunquin, 2018), there are two methods of implementing network research. One dealt with whole network (socio-centric) studies while the other, personal network (egocentric) studies. The former looked at a set of ties within a group, while the latter explored the social environment of only one person. Because the researchers wanted to know the influence of an individual's network in his/her reduction of risky sexual behavior, a personal network study methodology was used for this research's quantitative design.

### B. Variables and Measures

To determine the relationship between the social networks and risky sexual behaviors of the Filipino youth, the study enumerated the variables and measures reflected in Table 1. As supported by the study framework, network ego's background was delved into using the following measures were gathered from the respondents: age, sex, educational attainment, and their household income. Household income was determined through an eight-point range of values from 1 (Under PHP 7,890) to 7 (PHP

157,800 and above), and an additional option for “I don’t know/cannot disclose.” This categorization is “anchored on official poverty line thresholds” (Albert, Gaspar, & Raymundo, 2015, par. 1), where cut-off value calculations were based on the 2012 Family Income and Expenditure Survey (Albert, et al., 2015). Less than Php 7,890 per month family income was categorized through calculations as the per capita income less than the official poverty line/threshold. A monthly family income of Php 7,890 to Php 15,780 was calculated for low income Filipinos. Lower middle income is classified as those having a monthly family income of Php 15,780 to Php 31,560. Those in the middle income class were calculated to have a monthly family income of Php 31,560 to Php 78,900. Filipinos in the upper middle income class were considered to have a monthly family income of Php 78,900 to Php 118,350. A monthly family income of Php 118,350 to Php 157,800 was calculated for upper income Filipinos. Lastly, a monthly family income of at least Php 157,800 was categorized as the highest income class.

Religiosity was measured next using McCree et al.’s (2003) five-point, four-item Religiosity Scale, where the respondents were asked to disclose how frequently they engaged in activities about their religious orientation and involvement from a scale of 1 (always) to 5 (never).

Three measurements were utilized to quantify social media practice. Firstly, their frequency of online communication, measured on a five-point Likert scale, asked about how often they discussed risky sexual behaviors with their network online or through social media from a scale of 1 (always) to 5 (never). In addition, they were asked whether they used social media and how many hours they spent actively using it on a typical day. Consequently, they were asked about the degree of importance they placed on social

media using a modified version of Ellison, Steinfield and Lampe's (2007) Facebook Intensity Scale which was adapted into a five-point Social Media Intensity scale where 1 meant the statements were "exactly true" to them and 4 meant the statements were "not true at all". The scale was modified by replacing the Facebook terms into Social Media and removing some items that were repetitive.

Self-efficacy was measured using a modified General Self-Efficacy Scale (GSE) adapted from Schwarzer & Jerusalem (1995). The modified scale was eight items and asked the respondents how true the statements were to them from a scale of 1 (exactly true) to 4 (not true at all). Examples of the items included, "I am confident that I could deal efficiently with unexpected events" and "When I am confronted with a problem, I can usually find several solutions". Two items, "I can solve most problems if I invest the necessary effort." and "If I am in trouble, I can usually think of a solution" were not included due to redundancy.

The study assessed the respondents' level of riskiness with sexual behaviors by first asking them about whether they have had sexual relations or not. This was followed by three five-point scales that cumulatively measured their risky sexual behavior, guided by the Theory of Planned Behavior. As informed by literature, risky sexual behavior was divided into three sub-categories according to the concepts that defined RSB (Rye et al., 2001): intention, attitudes and subjective norms. All three used five-point, seven-item scales adapted from Rye et al.'s (2001) measures for risky sexual behavior. For intention and subjective norms, the respondents chose from a value of 1 (strongly agree) to 5 (strongly disagree). The scale 1 (very good) to 5 (very bad) was used to measure

attitudes. These three scales were turned into indices that determined the respondents' scores to represent their risky sexual behavior.

With reference to the identification of the respondents' social network and its attributes, the researchers examined four attributes, namely network size, network closeness, network homophily, and network density, that would help describe the network. For network size, respondents were asked to declare the number of individuals they have discussed risky sexual behaviors for network size, with a maximum of five RSB discussants only for each respondent. To determine their closeness, the researchers asked the respondents the level of intimacy they felt about each of their network members on a scale of 1 (not close) to 4 (very close). For network homophily, they were asked about how similar they perceived their thoughts on RSB to be with the thoughts of their network members. Respondents were asked to place their answers on a scale of 1 (dissimilar) to 4 (very similar). Lastly, network density was computed through the identification of the maximum number of alter connections in each respondent's network.

Table 1. *Variables and Measures*

<b>Objective</b>	<b>Variable</b>	<b>Measure</b>	<b>Instrument Section</b>
<i>The Network Ego's Individual Background</i>			
1.a	Age	Age last birthday	Part 1: Personal Information
1.a	Sex	Sexual orientation	
1.a	Educational attainment	Highest level of education attained	
1.a	Household income	2012 Family Income and Expenditure Survey eight-point	

		categorization of monthly income	
<i>The Network Ego's Individual Beliefs</i>			
1.c	Religiosity	McCree et al.'s (2003) five-point, four-item Religiosity Scale	Part 2: Religiosity
<i>The Network Ego's Social Media Practice</i>			
1.b	Frequency of online communication	Five-point Likert Scale about how often the network ego discusses risky sexual behaviors with his/her network online	Part 3: Social Media
1.b	Social media use	Whether social media was used or not; the number of hours of typical social media usage per day	
1.b	Social media intensity	Ellison et al.'s (2007) five-point, eight-item Facebook Intensity Scale, modified into a five-point, three-item Social Media Intensity Scale	Part 4: Social Media Intensity
<i>The Network Ego's Assessment of Self-efficacy</i>			
1.c	Network ego's self-efficacy	Four-point, ten-item General Self-Efficacy Scale (GSE) adapted from Schwarzer & Jerusalem (1995), modified into a four-point, eight-item Self-Efficacy Scale	Part 5: Self-efficacy

<i>The Network Ego's Assessment of Risky Sexual Behaviors</i>			
1.d.	Sexual Experience	Whether or not ego has had sexual relation/s	Part 6: Risky Sexual Behaviors
1.d., 4.	Intention towards risky sexual behaviors	Rye et al.'s (2001) five-point, 11-item Intention Measures for Risky Sexual Behavior, modified into a five-point, seven-item Intention Index	
1.d., 4.	Attitudes towards risky sexual behaviors	Rye et al.'s (2001) five-point, 11-item Attitude Measures for Risky Sexual Behavior, modified into a five-point, seven-item Attitude Index	
1.d., 4.	Subjective norms on risky sexual behaviors	Rye et al.'s (2001) five-point, 11-item Subjective Norms Measures for Risky Sexual Behavior, modified into a five-point, seven-item Norms Index	
<i>The Identification of Network Ego's Network and its Attributes</i>			
2., 3.a., 4.	Network size	Declared number of alters	Part 7: Social Networks
2., 3.b., 4.	Network closeness	How intimately close egos felt about their alters	
2., 3.c., 4.	Network homophily	Egos' perceived similarity of thoughts on risky sexual behavior with network alters	
2., 3.d., 4.	Network density	Number of alter connections in the ego's network	

### C. Research Instrument

The tool used for the survey was a house-to-house survey questionnaire with a paper-and-pencil interviewing (PAPI) method. The survey questionnaire was interviewer-administered with one (1) section that was self-administered. The survey questionnaire consisted of four (4) pages and 110 questions grouped into seven (7) sections; (1) Respondent's Personal Information, (2) Respondent's Religiosity, (3) Respondent's Social Media Use, (4) Respondent's Social Media Intensity, (5) Respondent's Self-efficacy, (6) Respondent's Risky Sexual Behavior, and (7) Respondent's Social Networks.

Before using the instrument for data gathering, it was pre-tested to 40 respondents who were selected through convenience sampling. After conducting reliability tests, it was then revised to become more valid and more reliable. The final scales used in the study were tested for internal consistency using Cronbach's alpha. All scales yielded acceptable internal consistency scores. (see Appendix A)

### D. Units of Analysis and Sampling

To accomplish the study's objectives, the researchers surveyed 408 Filipino youth that were (1) residing in the City of Manila and/or Quezon City, and (2) were aged 18 to 30 years old. Quezon City and the City of Manila were purposively chosen because they have the highest rate of HIV cases in Metro Manila (Geronimo, 2015). 18 to 30-year-old or "emerging adulthood" (Arnett, 2000) was the time range chosen for its "unique time of identity formation" that is between adolescence and young adulthood.

The study employed multi-stage sampling and combined purposive, simple random, and cluster sampling techniques. One (1) barangay in each district of Quezon City and the City of Manila was randomly chosen, as well as the two (2) residential streets in each sample barangay of Quezon City. For the City of Manila, respondents were chosen through cluster sampling, i.e., all households will be covered. This was because each of the barangay areas was too small to have been randomly sampled.

One (1) respondent was chosen per household. If there were more household members who were eligible for the interview, the respondent was selected through the last birthday method. Given that not all households were willing or eligible to be surveyed, two callbacks within the day of data gathering were employed, thereafter, the household member who celebrated her/his birthday immediately before the original respondent will be chosen as a replacement.

#### E. Data Gathering/Generation and Construction

Data gathering began in October 2019 and ended in November 2019. Interviewers were hired to aid the data collection process and were given proper orientation. Showcards were developed to aid the respondents in answering the survey instrument (see Appendix B) and courtesy calls to the barangay along with barangay letters were also secured to aid the interviewers in data gathering.

#### F. Data Analysis

Data collected from the surveys was encoded and analyzed using Microsoft Excel, IBM Statistical Package for the Social Sciences (SPSS), and IBM SPSS Analysis of a

Moment Structures (AMOS). SPSS AMOS 22 was used to perform Structural Equation Modeling (SEM). SPSS version 22 was used to transform variables, identifying frequencies and descriptive scores, while Microsoft Excel was used for organizing data put on SPSS and SPSS AMOS. The data transformation techniques, as well as the formulas used in computing for certain variables are discussed below.

### *1. Data Transformation*

#### *a. Computing for Network Characteristics*

Four (4) variables comprised of network characteristics; network size, network closeness, network homophily, and network density.

##### *Network Size*

Network size was measured by computing for the total number of alters of a respondent.

##### *Network Closeness*

To compute for network closeness, the respondents were asked regarding how close they think they were with each of their alters. Answers were assigned scores, wherein 4 indicates “very close”, 3 as “close”, 2 as “moderately close”, and 1 as “not close” to an alter. Scores per alter were summed and the total score was divided by the highest possible score a respondent’s network may attain that is 4, multiplied by their network size. This is to normalize values, accounting for the differences in network sizes of the respondents.

To represent mathematically, network closeness was computed as follows:

$$NC = \frac{(C_1 + C_2 + C_3 \dots + C_n)}{(4n)}$$

Where: NC is the network closeness score  
 C is the closeness score of an alter  
 n is the total number of alters

### *Network Homophily*

To compute for network homophily, the respondents were asked regarding how similar they think their thoughts are about risky sexual behavior with each of their alters. Answers were assigned scores, wherein 4 indicates “very similar”, 3 as “similar”, 2 as “moderately similar”, and 1 as “dissimilar” from an alter. Scores per alter were summed and the total score was divided by the highest possible score a respondent’s network may attain that is 4, multiplied by their network size. This is to normalize values, accounting for the differences in network sizes of the respondents.

To represent mathematically, network homophily is computed as follows:

$$NH = \frac{(H_1 + H_2 + H_3 \dots + H_n)}{(4n)}$$

Where: NH is the network homophily score  
 H is the homophily score of an alter  
 n is the total number of alters

### *Network Density*

To compute for network density, the respondents were asked to identify how many among the listed network alters were known by other alters. The network density was computed by dividing the known connections by the maximum possible connections. Commonly, network density is computed through the calculation of the number of possible ties, expressed through  $n(n - 1)$ , where n connotes the total number of alters in

the social network. In the ego's network, the total number of alters was subtracted by 1 to account for the exclusion of the alter in his or her network. An alter cannot be counted in the network he or she is a part of. This was then divided by 2. This formula is a different way of computing for network density, which was used in the current study to check whether the values inputted were correct.

To represent mathematically, network density is computed as follows:

$$ND = \frac{n(n - 1)}{(2)}$$

Where: ND is the network density score  
n is the total number of alters

#### b. Calculating Risky Sexual Behavior Indices

For calculating risky sexual behavior, respondents were asked to answer three scales that measured risky sexual behavior: intention, attitudes, and norms. Scales were transformed into indices that determined the level of riskiness the respondents engaged in by accumulating the scores for each measurement of sexual behavior. This was developed by getting the sum of the answers, giving us values from 0 to 35. Scores were grouped to standardize them. Values from 1 to 7 were categorized as *strongly agree*, 8 to 14 as *agree*, 15 to 21 as *neutral*, 22 to 28 as *disagree*, and 29 to 35 were categorized as *strongly disagree*.

## 2. Hypothesis Testing

Structural Equation Modeling (SEM) was used to test the hypothesis proposed in the study. Prior to the SEM, correlation tests were performed to examine the significant associations between the variables. Only significant variable pairs were included in the

SEM for parsimony. SPSS AMOS 23 was used to perform the SEM, and SPSS version 22 was used to further correlate between variable pairs.

### G. Scope and Limitations

Apart from data stating that the Filipino youth in Quezon City and the City of Manila have the highest rate of HIV cases in Metro Manila (Geronimo, 2015), the study decided to focus on this demographic given the resource constraints of the researchers. Moreover, as this study is focused on the Filipino youth, the researchers strictly followed Jeffrey Arnett's concept of emerging adults. This is due to its "unique time of identity formation" where a shift in focus to physical intimacy happens (Arnett, Žukauskienė, & Sugimura, 2014). If the study were to use a different definition of youth, it would have to include those aged 17 and below. This posed an ethical issue considering that this age group is composed of minors and the discussion of risky sexual behaviors, even if it is concerned more about the respondents' network alters, presented heavier sensitivity issues.

While introducing a study concerning the relationship between the Filipino youth's social networks and their reduction of risky sexual behaviors opened new doors to information that is contextualized to Filipinos, not much network studies focusing on the Filipino youth have been produced. Thus, this study's utilization of Western scales contextualized into its Filipino counterpart does not guarantee that it fully encompassed the complete Filipino experience when it came to risky sexual behaviors.

## V. RESULTS AND DISCUSSION

Following the sequence of the study's research objectives, this section is divided into three sections. Section A presents the study's sample and their characteristics, particularly their individual background, social media practice, individual beliefs, and intention, attitudes, and subjective norms about risky sexual behaviors. Section B describes the risky sexual behavior social network of the Filipino youth, focusing first on their networks' characteristics and attributes. Correlation tests in reference to risky sexual behavior is demonstrated next. This is followed by a report of the multivariate analysis performed to determine the type of model produced by the variables. Included in this component are the analysis of significant variables, presentation of insignificant variables, and a synthesis of the study's findings.

### A. Respondent's Profile

#### *1. Individual Background*

Guided by literature, the individual background characteristics that were asked from the respondents included their age, sex, educational attainment, and monthly income.

Majority (59.9%) of the respondents were 18 to 24 years old and female (52.8%). Around one in three (31.3%) of them finished college, and their mean age was 23 years old ( $s = 3.9$ ). [Table 2]

Table 2. *Distribution of Respondents according to their Individual Background*

Individual Background Characteristics	Percentage	Frequency
Age (N=406)		
18-24	59.9	243
25-30	40.1	163
Sex (N=407)		
Male	47.2	192
Female	52.8	215
Educational Attainment (N=406)		
No formal education	0.5	2
Some elementary	0	0
Elementary	2.7	11
Some high school	8.9	36
High school	24.6	100
Some vocational	2.2	9
Vocational	2.5	10
Some college	23.6	96
College	31.3	127
Higher degree	3.7	15
Monthly Income (N=408)		
Under PHP 7,890	14.2	58
PHP 7,890 to PHP 15,780	28.2	115
PHP 15,780 to PHP 31,560	22.5	92
PHP 31,560 to PHP 78,900	11.3	46
PHP 78,900 to PHP 118,350	2.2	9
PHP 118,350 to PHP 157,800	0	0
PHP 157,800 and above	0.7	3
I don't know/cannot disclose	20.8	85

## 2. Social Media Practice

Results for social media practice showed that almost all (90.7%) of the respondents had and used social media. This supports the general finding when it comes to the Filipino youth that a large amount of them are avid users of social media (YAFS 4, 2013). They reported to have spent an average of four hours actively using it on a typical day, as opposed to the eight hours per day reported by Hootsuite (2019). [Table 3]

Table 3. Respondents' Social Media Use (N=408)

Social Media Use	Percentage	Frequency
Yes	90.7	370
No	9.3	38

When asked how often they talked to their social network online, the respondents mentioned that they only talked to them sometimes ( $\bar{x} = 3.41, s = 1.39$ ). As shown in Table 4, social media appeared to be somewhat essential to the sample's day-to-day life, as reflected in their answers for the modified social media intensity scale, where 1 signified that the statements were "exactly true" to them, 2 meant the statements were "moderately true", 3 meant they were "hardly true", and 4 indicated that they were "not true" or applicable to them at all. The respondents reported that they did use social media as part of their everyday activity ( $\bar{x} = 1.67, s = 0.83$ ) and were proud to tell people they were on social media to a certain extent ( $\bar{x} = 2.13, s = 1.00$ ). They also reported that fairly felt out of touch when they have not logged into their social media accounts for a while ( $\bar{x} = 2.31, s = 1.08$ ). [Table 4]

Table 4. *Mean Scores for Other Indicators of Social Media Practice*

Social Media Characteristics	Mean	Std. Dev.
Number of Hours of Active Social Media Use (N=371)	4.02	3.57
Frequency of Communication Online (N=664)	3.41	1.39
Social Media Intensity (N=408)		
Using social media is part of my everyday activity.	1.67	0.83
I am proud to tell people I'm on social media.	2.13	1.00
I feel out of touch when I haven't logged onto my social media accounts for a while.	2.31	1.08

### 3. *Individual Beliefs*

The sample gave varying but positive responses when discussing how frequently they took part in religious or spiritual activities, from a scale of 1 - “always” to 5 - “never” using McCree et al.’s (2003) Religiosity Scale. It was found that they usually attended religious or spiritual services ( $\bar{x} = 2.40$ ,  $s = 1.10$ ) and usually to almost always prayed or meditated ( $\bar{x} = 1.85$ ,  $s = 1.09$ ). From time to time they talked to others about religious concerns ( $\bar{x} = 3.12$ ,  $s = 1.16$ ) and with a religious or spiritual leader ( $\bar{x} = 3.54$ ,  $s = 1.23$ ).

A General Self-Efficacy Scale (GSE) was used to measure the respondents’ self-efficacy, where a response of 1 indicated the scale statements were “exactly true” to the respondent, and a 4 indicated that the statements were “not true at all.” Generally, the respondents believed they can always manage to solve difficult problems if they tried hard enough ( $\bar{x} = 1.60$ ,  $s = 0.67$ ), handle whatever came their way ( $\bar{x} = 1.68$ ,  $s = 0.63$ ),

and can usually find several solutions when confronted with a problem ( $\bar{x} = 1.80$ ,  $s = 0.69$ ). [Table 5]

Table 5. Mean Scores for Respondents' Religiosity and Self-Efficacy

Individual Beliefs	Mean	Std. Deviation
Religiosity (N=408)		
Attend religious or spiritual services	2.40	1.10
Pray or meditate	1.85	1.09
Talk to others about religious or spiritual concerns	3.12	1.16
Talk with a religious or spiritual leader (minister/priest)	3.54	1.23
Self-Efficacy (N=408)		
I can always manage to solve difficult problems if I try hard enough.	1.60	0.67
If someone opposes me, I can find the means and ways to get what I want.	2.02	0.81
It is easy for me to stick to my aims and accomplish my goals.	1.91	0.83
I am confident that I could deal efficiently with unexpected events.	1.95	0.72
Thanks to my resourcefulness, I know how to handle unforeseen situations.	1.90	0.74
I can remain calm when facing difficulties because I can rely on my coping abilities.	1.94	0.80
When I am confronted with a problem, I can usually find several solutions.	1.80	0.69
I can usually handle whatever comes my way.	1.68	0.63

*4. Intention, Attitudes, and Subjective Norms  
towards Risky Sexual Behaviors*

Slightly more than half of the respondents (50.9%) reported that they have had previous sexual experience, indicating that there was not a large discrepancy between them and those who have never had any sexual experience (49.1%, Table 6). The larger percentage of respondents that have had previous sexual experience is in consonance with research on the Filipino youth's sexual behaviors, where there has been an observed increase in early sexual initiation (YAFS 4, 2013; Cheng et al., 2016) and an increased incidence of premarital sex among the youth (YAFS 4, 2013; Laguna, 2004).

Table 6. *Respondents' Sexual Experience (N=407)*

Sexual Experience	Percentage	Frequency
Yes	50.9	207
No	49.1	200

In measuring risky sexual behavior, the respondents answered Rye et al.'s (2001) modified Risky Sexual Behavior scale grounded on the Theory of Planned Behavior. Said scale was divided into three major concepts—intention to carry out sexual behaviors, attitude towards sexual behaviors, and subjective norms about sexual behaviors. For intention and subjective norms, 1 indicated they “strongly agreed” to the statements and 5 meant they “strongly disagreed” with them. For attitudes, 1 meant the sample thought the statements were “very good” and 5 signified “very bad”. For all three concepts, a score closer to zero implied that the sample was exhibiting less risky sexual behavior. The mean scores and standard deviations for all three concepts are summarized in Table 7.

The results suggested that the respondents were very inclined to have sex in private (as opposed to having sex in public) ( $\bar{x} = 1.46, s = 0.80$ ), have only one sexual partner ( $\bar{x} = 1.62, s = 0.96$ ), and talk to their partner about safe sex ( $\bar{x} = 1.65, s = 0.93$ ). This is in agreement with the conservative and religious culture of the Philippines that continues to dominate society today (Delgado-Infante & Ofreno, 2014; Nadal, 2009; Tan, 1993). The youth, while exhibiting more sexual activity than expected, still carry conservative views about sex.

For the rest of the statements, the sample reported relatively lower levels of inclination to carry out the given sexual behaviors. They less preferred to get an HIV test ( $\bar{x} = 2.03, s = 1.13$ ), ask their partner to have an HIV test ( $\bar{x} = 2.03, s = 1.11$ ), use condoms ( $\bar{x} = 2.15, s = 1.29$ ), and use birth control pills ( $\bar{x} = 2.31, s = 1.30$ ). This result is in agreement with the persistent stigma against HIV, where HIV-related health services are not recognized as helpful (Tan, 1993), and common misconceptions about it are still believed by people. Low preference for condoms and birth control pills could be attributed to misinformation about condom use, which causes fear for some (Lucea, Hindin, Gultiano, Kub, and Rose, 2013).

In evaluating how good or bad the set of sexual behaviors were to the respondent, the results were consistent with their intention to perform these behaviors in that they also gave the highest or less risky responses for having sex in private ( $\bar{x} = 1.40, s = 0.73$ ), talking to their partner about safe sex ( $\bar{x} = 1.55, s = 0.83$ ), and having only one sexual partner ( $\bar{x} = 1.57, s = 0.93$ ). This indicated that they thought these three behaviors were “very good”. The sample also perceived the rest of the sexual behaviors to be “very good” or “good” but at a lesser extent—asking their partner to have an HIV test ( $\bar{x} =$

1.79,  $s = 0.95$ ), using condoms ( $\bar{x} = 1.79$ ,  $s = 1.01$ ), getting an HIV test ( $\bar{x} = 1.84$ ,  $s = 1.04$ ), and using birth control pills ( $\bar{x} = 2.00$ ,  $s = 1.05$ ).

Table 7. Mean Scores for Measures of Risky Sexual Behavior

Risky Sexual Behavior Characteristics	Mean	Std. Dev.
Risky Sexual Behavior - Intention (N=408)		
Using condoms	2.15	1.29
Using birth control pills	2.31	1.30
Having only one sexual partner	1.62	0.96
Getting an HIV test	2.03	1.13
Asking my partner to have an HIV test	2.03	1.11
Talking to my partner about safe sex	1.65	0.93
Having sex in private	1.46	0.80
Risky Sexual Behavior - Attitudes (N=398)		
Using condoms	1.79	1.01
Using birth control pills	2.00	1.05
Having only one sexual partner	1.57	0.93
Getting an HIV test	1.84	1.04
Asking my partner to have an HIV test	1.79	0.95
Talking to my partner about safe sex	1.55	0.83
Having sex in private	1.40	0.73
Risky Sexual Behavior - Subjective Norms (N=397)		
Using condoms	1.83	1.09
Using birth control pills	1.99	1.05
Having only one sexual partner	1.57	0.90
Getting an HIV test	1.90	1.01
Asking my partner to have an HIV test	1.86	0.98
Talking to my partner about safe sex	1.60	0.89
Having sex in private	1.47	0.77

The results for the last measure of risky sexual behavior, subjective norms, showed that the respondents also believed that their significant others (such as family

and/or peers) highly supported their performance of the following sexual behaviors: having sex in private ( $\bar{x} = 1.47, s = 0.77$ ), having only one sexual partner ( $\bar{x} = 1.57, s = 0.90$ ), and talking to their partner about safe sex ( $\bar{x} = 1.60, s = 0.89$ ). The rest of the sexual behaviors were perceived to be less encouraged by their significant others: using condoms ( $\bar{x} = 1.83, s = 1.09$ ), asking their partner to have an HIV test ( $\bar{x} = 1.86, s = 0.98$ ), getting an HIV test ( $\bar{x} = 1.90, s = 1.01$ ), and using birth control pills ( $\bar{x} = 1.99, s = 1.05$ ).

The Intention, Attitude, and Subjective Norms scales were combined to create an index that concretely determined their level of riskiness when it came to sexual behaviors. Given that there were a total of seven items in each concept of risky sexual behavior and five options from the scale in each concept, the number of items and options were multiplied to identify the highest possible score for each item: 35. A score ranging from 0 to 7 meant the respondents “strongly agreed” with the statements or found them to be “very good”. An 8 to 14 score meant they “agreed” to these or found them “good”; respondents were deemed “neutral” towards the statements if their answers ranged from 15 to 21. They “disagreed” or found the statements to be “bad” if their score is in between 22 to 28, and if they “strongly disagreed” or found the statements to be “very bad”, they placed a score of 29 to 35. This connoted that a score closer to zero meant less risky behavior and a score closer to 35 indicated riskier behavior.

The scores were predominantly positive, ranging between the “strongly agree” to “agree” options for intention ( $\bar{x} = 13.25, s = 5.35$ ) and subjective norms ( $\bar{x} = 12.21, s = 5.02$ ). Correspondingly, the attitudes score was positioned between “very good” and “good” ( $\bar{x} = 11.94, s = 4.73$ ). The sample’s total score for risky sexual behavior was  $\bar{x} =$

12.39 ( $s = 4.43$ ), implying that the respondents performed and/or preferred safe sexual behaviors. [Table 8]

Table 8. *Risky Sexual Behavior Index (N=397)*

Risky Sexual Behavior Index	Mean	Std. Deviation
Intention Score	13.25	5.35
Attitude Score	11.94	4.73
Subjective Norms Score	12.21	5.02
Total Risky Sexual Behavior Score	12.39	4.43

## B. Risky Sexual Behavior Network of the Filipino Youth

### 1. Network Characteristics

A total of 353 out of the 408 respondents reported having discussed risky sexual behaviors with other individuals; these respondents comprised of the portion of the sample who had social networks for risky sexual behaviors. Background information for their network members or alters were collated to characterize their network, and the results are summarized in Table 9.

On average, the network alters were of 24 years of age. Almost all of them (96.92%) were 18 years old and older. The greatest number of network alters finished college (36.2%) and were first met at the school of the respondents (38.1%). Less than half of the alters (46.5%) were categorized as friends by the respondents, and seven in 10 (71.7%) of them used chat or instant messaging as a way to reach out to the sample.

Table 9. *Distribution of Network Alters according to their Background*

Network Background	Percentage	Frequency
Age (N=650)		
Young (<18)	3.08	20
Old (>18)	96.92	630
Educational Attainment (N=669)		
No formal education	0.4	3
Some elementary	0	0
Elementary	2.4	16
Some high school	8.7	58
High school	27.5	184
Some vocational	0.9	6
Vocational	1.3	9
Some college	19.1	128
College	36.2	242
Higher degree	3.5	23
Where did you get to know this person? (N=669)		
From my family	17.9	120
From school	38.1	255
From my organization	2.5	17
From my place of work	15.8	106
From my neighbourhood	22.3	149
From social media	1.6	11
Others	1.6	11
Relationship with Respondent (N=669)		
Family member	16.1	108
Romantic partner	10.2	68
Best friend	25.1	168
Friend	46.5	311
Acquaintance	1.3	9
Others	0.7	5
Social Media Platform to Communicate (N=669)		
E-mail	1.2	8
Chat/IM	71.7	480

Network Background	Percentage	Frequency
Post/Tweet	0.3	2
Comments	0.7	5
Voice call	3.4	23
Video call	3.1	21
Others	0.4	3
Do not talk online	19.0	127

The respondents were asked about their network alters' perceived level of knowledge on risky sexual behaviors by rating this concept on a scale of 1 to 10 with 10 being the highest. As shown in Table 10, the sample reported 8.25 as the average level of knowledge alters have on RSB ( $s = 1.85$ ) which meant they were quite knowledgeable and familiar about the topic. The respondents often talked to their respective alters offline about RSB ( $\bar{x} = 2.66$ ,  $s = 1.14$ ).

Table 10. *Other Network Background Characteristics*

Other Network Background	Mean	Std. Deviation
Alters' Risky Sexual Behavior Knowledge (N=663)	8.25	1.85
Frequency of Communication Offline (N=669)	2.66	1.14

## 2. Network Attributes

The study examined four network attributes of the respondents vis-à-vis their reduction of risky sexual behavior. The results are shown in Table 11.

Dealing with the respondents' network size, the results revealed that half of the networks have a size of 1 or lower, while half of the networks have a size of 1 or higher. This meant that they mostly only discussed risky sexual behaviors with one confidant.

This can be ascribed to literature which declared that sexually-related information are still considered taboo (de Vera, 2019; Rosenfield, 1999), and discussing it with multiple others may lead to judgement or disempowerment (Szucs, 2013). Conversing about the topic with only one individual possibly creates a safe space for the youth to share their thoughts.

For network closeness, a score closer to 1 indicated a high level of perceived intimacy between the network alters and the respondents. For the results, the sample reported a mean closeness score of  $\bar{x} = 0.86$  ( $s = 0.16$ ) with their alters, which indicated they had an intimate relationship with them notwithstanding the type of relationship they possessed. The Filipino youth maintain close ties with their network and engage in discussions only with people whom they are close to since it is more likely that they will be listened to by these people. The apprehension to engage in conversations with other people could also be due to the prevailing notion of sex as a taboo in the Philippines (de Vera, 2019; Rosenfield, 1999). The same standard was followed when calculating for network homophily and density; a score closer to 1 meant that the respondents and their alters shared highly similar opinions on risky sexual behaviors. An average homophily score of  $\bar{x} = 0.73$  ( $s = 0.21$ ) was observed within the sample; given this score's closeness to 1, it can be deduced that the sample and their alters had relatively homogeneous RSB opinions. It can be surmised that the respondents only discussed RSB with network members who had similar opinions about the subject to further their opinions or continue their engagement in risky sexual behaviors. As stated in literature, homogeneity between individuals has an extensive impact on the likelihood of performing risky sexual behavior

(Smith et al., 2004, as cited in Amirkhanian, 2014; Martino et al., 2011; Tucker et al., 2012; Tyler, 2008).

This high score was also observed with the sample's network density score:  $\bar{x} = 0.87$  ( $s = 0.31$ ) which indicated cohesiveness within the social network. This meant that all network alters and ego were reciprocally connected with each other. These findings explain how up until today, the prevalence of forces that regulate sex discourse and make the topic extremely controversial (Irvine, 2002, as cited in Szucs, 2013) still permeate the scene. [Table 11]

Table 11. *Network Closeness, Homophily, and Density Scores of the Respondents' Risky Sexual Behavior Social Network (N=353)*

Network Attributes of Respondents	Mean	Std. Deviation
Network Closeness	0.86	0.16
Network Homophily	0.73	0.21
Network Density	0.87	0.31

### 3. *Bivariate analysis: Exploratory Correlation Tests*

To generate more insights about the interrelationship of the variables in reducing risky sexual behavior, bivariate correlation tests were conducted. The following significant relationships were found:

***Educational attainment*** had a significant inverse relationship with ***religiosity*** ( $r_s = -.181$ ,  $n = 408$ ,  $p < .01$ ), ***risky sexual behavior*** ( $r_s = -.223$ ,  $n = 408$ ,  $p < .01$ ), and ***network size*** ( $r_s = .112$ ,  $n = 408$ ,  $p < .05$ ). This signified that respondents with higher educational attainment were more likely to be less religious, engage less in risky sexual

behaviors, and have smaller networks than those of lower educational attainment. These findings partially supported H1, H7, and H4 respectively.

The respondents' *monthly income* had a significant inverse relationship with *risky sexual behavior* ( $r_s = -.115$ ,  $n = 408$ ,  $p < .05$ ), such that respondents who came from higher income classes were more likely to be less risky with sexual behaviors. This partially supported H7 of the study.

*Monthly income* had a significant positive relationship with *network size* ( $r_s = .135$ ,  $n = 408$ ,  $p < .01$ ). This meant that those of higher income classes were more likely to have larger network sizes. H4 was partly supported in this finding.

The respondents' *frequency of online communication* with their risky sexual behavior social network had a significant inverse relationship with *network size* ( $r_s = -.129$ ,  $n = 408$ ;  $p < .01$ ). This signified how respondents with smaller network sizes tended to communicate with their networks online more than those with larger network sizes. H5 was partially supported in this result.

Their *network size* had a significant inverse relationship with their *risky sexual behavior* ( $r_s = -.154$ ,  $n = 408$ ,  $p < .01$ ). This meant that respondents with smaller network sizes tended to engage less in risky sexual behaviors, thus supporting H8 of the study.

[Table 12]

Table 12. *Spearman Correlation Matrix*

	Educational Attainment	Monthly Income	Network Size
Age	<b>0.314**</b>	<b>-0.135**</b>	- 0.018
Educational Attainment		<b>0.112*</b>	<b>-0.112*</b>
Monthly Income	<b>0.112*</b>		<b>0.135**</b>
Religiosity	<b>-0.181**</b>	0.021	0.039
Self-Efficacy	-0.002	-0.011	0.008
Social Media Use	-0.043	-0.045	-0.037
Frequency of Online Communication	-0.032	0.047	<b>-0.129**</b>
Social Media Intensity	0.074	0.067	0.059
Network Closeness	0.077	0.048	<b>0.364**</b>
Network Homophily	0.060	0.019	<b>0.392**</b>
Network Density	0.056	0.095	<b>0.101*</b>
Risky Sexual Behavior	<b>-0.223**</b>	<b>-0.115*</b>	<b>-0.154**</b>
<i>p</i> ≤ 0.01**			
<i>p</i> ≤ 0.05*			

*Age* had a significant positive relationship with *religiosity* ( $r = .005$ ,  $n = 408$ ,  $p < .01$ ), *social media intensity* ( $r = .020$ ,  $n = 408$ ,  $p < .05$ ), and *risky sexual behavior* ( $r = .037$ ,  $n = 408$ ,  $p < .05$ ). While it had a significant inverse relationship with *network closeness* ( $r = -.022$ ,  $n = 408$ ,  $p < .05$ ), *network homophily* ( $r = -.039$ ,  $n = 408$ ,  $p < .05$ ), and *network density* ( $r = -.037$ ,  $n = 408$ ,  $p < .05$ ). This meant that as an individual gets older, the more religious they become, and the more social media they use, the more they engage in risky sexual behavior. The inverse relationship between age and the network variables showed that as an individual gets older, the closer, denser, and more similar

their thoughts were with their sexual communication networks. With that, these findings partially supported H1, H2, H4, and H7 of the study.

The respondents' *religiosity* had a significant inverse relationship with *social media use* ( $r = -.040$ ,  $n = 408$ ,  $p < .05$ ) yet a significant positive relationship with *social media intensity* ( $r = .048$ ,  $n = 408$ ,  $p < .05$ ). This meant that individuals with higher religiosity tend to use less social media, however, those that do so, deemed it important in their life. This finding partially supported H3 of the study.

*Self- efficacy* had a significant positive relationship with *frequency of online communication* ( $r = .012$ ,  $n = 408$ ,  $p < .05$ ) as well as *social media intensity* ( $r = .015$ ,  $n = 408$ ,  $p < .05$ ). This meant that those with higher self-efficacy tend to communicate more online and more intensely. This finding also partially supported H3 of the study.

The respondents' *social media use* had a significant inverse relationship with *social media intensity* ( $r = -.305$ ,  $n = 408$ ,  $p < .05$ ), *network closeness* ( $r = -.002$ ,  $n = 408$ ,  $p < .01$ ), and *risky sexual behavior* ( $r = -.002$ ,  $n = 408$ ,  $p < .01$ ) while it had a positive significant relationship with *network homophily* ( $r = .025$ ,  $n = 408$ ,  $p < .05$ ), *network density* ( $r = .012$ ,  $n = 408$ ,  $p < .05$ ). This meant that the individuals who used more social media, had a more distant relationship with their sexual communication network consequently making them more prone to risky sexual behavior. Moreover, those who had higher social media use have shared more similar thoughts with their networks and also have a more cohesive sexual communication network. These findings partially supported H5 of the study.

The respondents' *frequency of online communication* with their risky sexual behavior social network had a significant positive relationship with *social media*

*intensity* ( $r = .016$ ,  $n = 408$ ,  $p < .05$ ), *network homophily* ( $r = .001$ ,  $n = 408$ ,  $p < .01$ ), *network density* ( $r = .012$ ,  $n = 408$ ,  $p < .05$ ), yet had a significant inverse relationship with *network closeness* ( $r = -.047$ ,  $n = 408$ ,  $p < .05$ ), and *risky sexual behavior* ( $r = -.002$ ,  $n = 408$ ,  $p < .01$ ). This signified a higher frequency of communication online developed more intensity to use social media. This finding also meant that they had a more dense sexual communication network wherein they share more similar opinions with. Further, findings showed the more frequent online communication is, the more distant they were with their network. This finding also argued more online communication to be more prone to risky sexual behavior. Consequently, these findings also partially supported H5 of the study.

Their *social media intensity* had a significant inverse relationship with their *risky sexual behavior* ( $r = -.047$ ,  $n = 408$ ,  $p < .05$ ). This meant that respondents who consider social media as more important, tend to engage less in risky sexual behavior. It should be noted that these variables were not initially hypothesized in the study to exhibit significant relations with each other. However, bivariate correlation tests have indicated that such a relationship existed between the two.

Their *network closeness* had a significant inverse relationship with their *risky sexual behavior* ( $r = -.019$ ,  $n = 408$ ,  $p < .05$ ). This indicated the closer the sexual communication network an individual has, the less they engage in risky sexual behavior.

Their *network homophily* had a significant inverse relationship with their *risky sexual behavior* ( $r = -.021$ ,  $n = 408$ ,  $p < .05$ ). This implied that the more similar thoughts an individual has with their network, the less they engage in risky sexual behavior.

Their *network density* had a significant inverse relationship with their *risky sexual behavior* ( $r = -.040$ ,  $n = 408$ ,  $p < .05$ ). This signified the more cohesive the sexual communication network of the individual, the less they engage in risky sexual behavior. An individual's network closeness, homophily, and density in relation with their risky sexual behavior partially supported H8 of the study. [Table 13]

In testing for the association of sex with other variables in the study, the researchers utilized Lambda and Cramer's V correlation tests. These tests identified how strong or weak the association between two individual variables was. For all the relationships examined using these tests, no significance was found.

There existed a very weak association ( $\lambda = .058$ ,  $p = .262$ ) between *sex* and *religiosity*. Males (47.2%) and females (52.8%) tended to be equally religious. This refuted literature which observed that Filipino females were more religious than their male counterparts. *Sex* and *self-efficacy* were found to have no association at all ( $\lambda = .005$ ,  $p = .317$ ).

*Sex* and *social media use* had a very weak association as well ( $\lambda = .026$ ,  $p = .317$ ), such that males (47.2%) and females (52.8%) tended to use social media at the same extent. The same could be said for *sex* and *frequency of online communication* which had a very weak association ( $\lambda = .013$ ,  $p = .317$ ). When talking to network members, males (47.2%) and females (52.8%) both tended to converse with them online to the same degree. *Sex* and *social media intensity* exhibited no association at all ( $\lambda = .005$ ,  $p = .317$ ). The probability of males (47.2%) or females (52.8%) to place importance on their social media cannot be identified.

Table 13. *Pearson Correlation Matrix*

	Age	Religiosity	Self-Efficacy	Social Media Use	Freq. of Online Communication	Social Media Intensity	Network Closeness	Network Homophily	Network Density	Risky Sexual Behavior
Age	1.000	<b>0.005**</b>	-0.150	0.086	-0.193	<b>0.020*</b>	<b>-0.022*</b>	<b>-0.039*</b>	<b>-0.030*</b>	<b>0.037*</b>
Religiosity	<b>0.005**</b>	1.000	0.154	<b>-0.040*</b>	0.101	<b>0.048*</b>	0.069	0.063	0.060	0.116
Self-Efficacy	-0.150	0.154	1.000	-0.083	<b>0.012*</b>	<b>0.015*</b>	0.078	0.101	0.052	0.145
Social Media Use	0.086	<b>-0.04*</b>	-0.083	1.000	-0.176	<b>-0.305*</b>	<b>-0.002**</b>	<b>0.025*</b>	<b>0.044*</b>	<b>0.000**</b>
Freq. of Online Communication	-0.096	0.149	<b>0.006**</b>	<b>-0.036*</b>	0.107	<b>0.016*</b>	<b>-0.047*</b>	<b>0.001**</b>	<b>-0.012*</b>	<b>-0.002**</b>
Social Media Intensity	<b>0.020*</b>	<b>0.048*</b>	<b>0.015*</b>	-0.305*	<b>0.023*</b>	1.000	0.100	0.116	0.084	<b>-0.047*</b>
Network Closeness	<b>-0.022*</b>	0.069	0.078	<b>-0.002**</b>	<b>0.04*</b>	0.100	1.000	0.812	0.666	<b>-0.019*</b>
Network Homophily	<b>-0.039*</b>	0.063	0.101	0.025*	<b>0.025*</b>	0.116	0.812	1.000	0.572	<b>-0.021*</b>
Network Density	<b>-0.030*</b>	0.060	0.052	0.044*	<b>0.026*</b>	0.084	0.666	0.572	1.000	<b>-0.040*</b>
Risky Sexual Behavior	<b>0.037*</b>	0.116	0.145	<b>0.000**</b>	<b>-0.016*</b>	<b>-0.047*</b>	<b>-0.019*</b>	<b>-0.021*</b>	<b>-0.040*</b>	1.000
p ≤ 0.01**										
p ≤ 0.05*										

There was a weak association ( $V = .138$ ,  $p = .997$ ) between *sex* and *network closeness*. The same could be concluded for *sex* and *network density* ( $V = .113$ ,  $p = .997$ ). Males (47.2%) and females (52.8%) tended to be close to their network and have dense, cohesive networks at the same extent.

*Sex* and *network size* had no association between them ( $\lambda = .005$ ,  $p = .317$ ), contrary to literature that often found a positive relationship between the two variables. *Sex* and *network homophily* were also not associated ( $\lambda = .004$ ,  $p = .317$ ).

*Sex* and *risky sexual behavior* had a very weak association ( $V = .096$ ,  $p = .486$ ), which suggested that there is not much a difference between the risky sexual behavior of the two sexes. (see Appendix D)

#### 4. *Multivariate Analysis:*

##### *Structural Equation Model (SEM) of Reduced Risky Sexual Behavior*

Structural Equation Modelling (SEM) using SPSS Analysis of Moment Structures (AMOS) confirmed the relationships through the formulation of a model that explained the influence of the Filipino youth's social networks on their reduction of risky sexual behavior. Standard goodness-of-fit (GOF) model measures were used to determine the model's accuracy in explaining this phenomenon. Such measures used were the root mean square error of approximation (RMSEA), Comparative Fit Index (CFI), and Tucker-Lewis Index (TLI). An RMSEA value of less than 0.10 equates to a perfect model fit. For CFI and TLI, a value closer to 1 tells us how well the model fits the research observations.

All grouping variables in the conceptual framework were maintained, namely, individual background, social media practice, individual beliefs, network attributes, and

risky sexual behavior. However, based on the exploratory correlation tests, some measures were considered insignificant and were thus removed from the analysis. This is to achieve the best model fit.

Modifications were further made upon testing. This, the resulting model, followed a path design different from the study's conceptual framework and from the variables highlighted by correlation tests. The variables chosen were the ones which significantly contributed to the reduction of risky sexual behavior. As shown in Figure 3, not all variables were positively related.

SEM results determined the following variables that best explain risky sexual behavior: *sex*, *self-efficacy*, and *educational attainment* partially mediated by *network size*. Five causal paths leading to risky sexual behavior were observed. As illustrated in Figure 3 and Table 12, *sex* ( $\beta = -1.03$ ,  $p < .05$ ), *educational attainment* ( $\beta = -0.38$ ,  $p < .001$ ), *self-efficacy* ( $\beta = 1.39$ ,  $p < .01$ ), and *network size* ( $\beta = -0.35$ ,  $p < .05$ ) significantly determined the respondents' likelihood of engaging in risky sexual behaviors. The relationship between educational attainment and risky sexual behavior was observed to be partially mediated by *network size* ( $\beta = 0.09$ ,  $p < .01$ ).

Significant relationships were also found between individual background and individual beliefs. Social media practice was unrelated to any of the variables in the model. The *sex* of the respondents was positively and highly associated with *religiosity* ( $\beta = -0.11$ ,  $p < .001$ ). *Educational attainment* was also indicated to have a strong relationship with *religiosity* ( $\beta = -0.28$ ,  $p < .001$ ). Within the variables for individual beliefs, *self-efficacy* and *religiosity* were observed to be positively related ( $\beta = 0.05$ ,  $p < .01$ ).

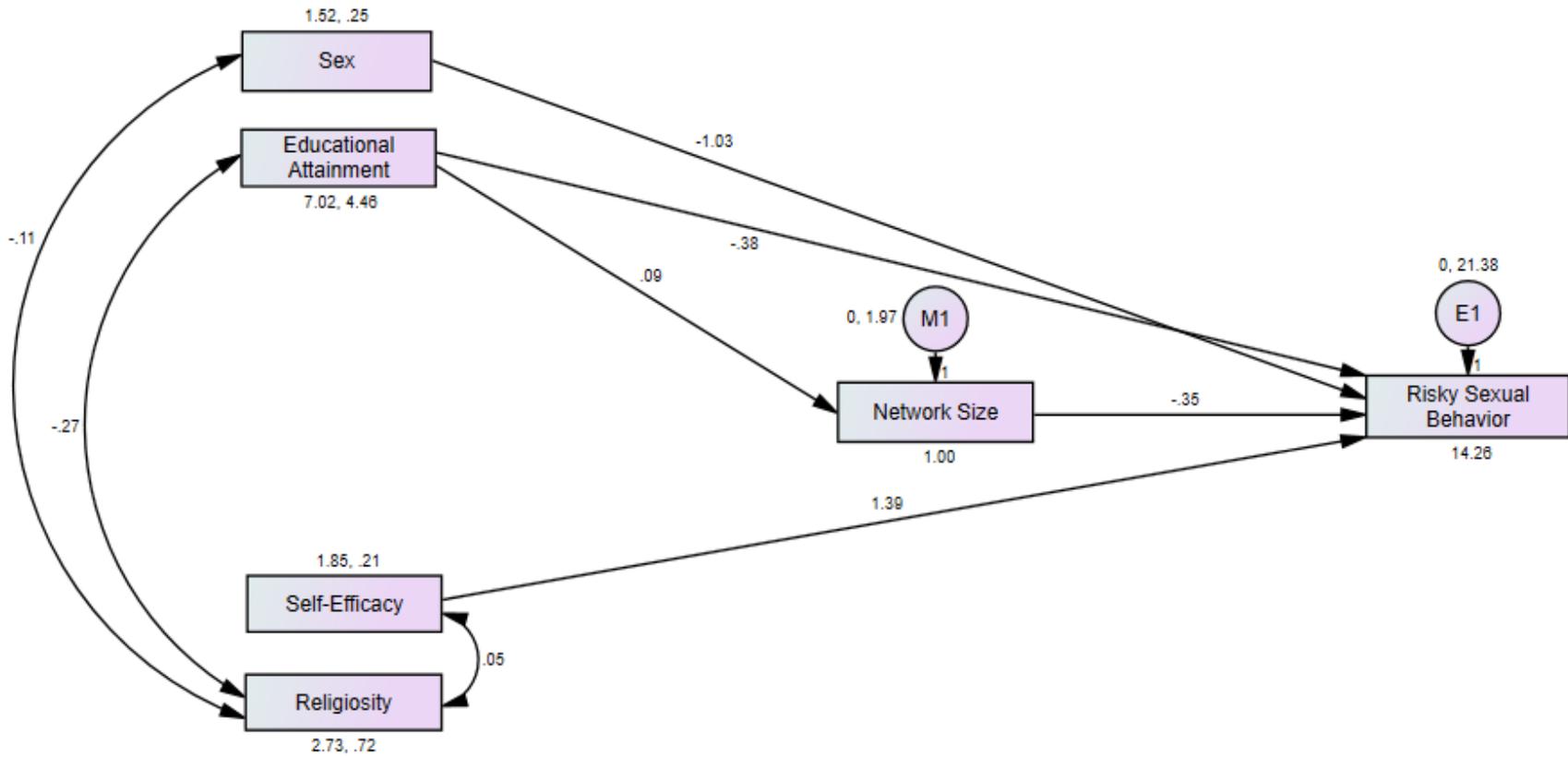
The reduction of risky sexual behavior model as a whole demonstrated a good fit (RMSEA = .02, CFI = .98, TLI = .97,  $\chi^2 [7] = 8.24$ ), where *educational attainment* was a significant factor that influence risky sexual behavior through *social network size*. *Sex* also influenced risky sexual behavior. H7 was partially supported in that individual background was significantly related to risky sexual behavior. However, out of the four measures of individual background, only educational attainment and sex appeared to be significant. In the same manner, H4 was also supported, stemming from the association between *educational attainment* and *network size*. This confirmed the significant relationship between individual background and network attributes. In addition, H9 was partially supported; the respondents' individual beliefs, particularly *self-efficacy*, was significantly related to their risky sexual behavior. H8, which hypothesized a significant relationship between network attributes and risky sexual behavior, was also partially supported given that *network size* appeared to be a significant predictor of the behavior.

The model results also pointed to a significant relationship between individual background and individual beliefs, therefore partially supporting H1. *Religiosity* was found to be correlated with *sex* and *educational attainment*.

Table 14. *Effect estimates of Individual Background and Beliefs and Network Attributes on Risky Sexual Behavior*

Path	Estimate
<i>Individual Background</i>	
Sex to Risky Sexual Behavior	-1.03*
Educational Attainment to Risky Sexual Behavior	-0.38***
Educational Attainment to Network Size	0.09**
<i>Network Attributes</i>	
Network Size to Risky Sexual Behavior	-0.35*
<i>Individual Beliefs</i>	
Self-Efficacy to Risky Sexual Behavior	1.39**
***p < 0.001 **p < 0.01 *p < 0.05	

Figure 3. Path Diagram of Direct Effects of Individual Background and Beliefs on Risk Sexual Behavior Mediated by Network Size



Structural Equation Modelling (SEM) provided variables fit to create the best model as described in the previous section. Results from the SEM showed partial support for H1, H4, H7, H8, and H9. These hypotheses accounted for some variables under individual background and individual beliefs to be significant with one another, supporting H1 respectively. Meanwhile, H7, H8, and H9 examined the significant direct effect of individual background, network attributes, and individual beliefs on risky sexual behavior. This implied that characteristics inherent to individuals themselves coupled with the size of their social network were the best contributors to their risky sexual behavior.

The first hypothesis, *H1: Respondent's Individual Background is significantly related to their Individual Beliefs*, proposed a significant relationship between the background variables and belief variables of the Filipino youth. This hypothesis was partially supported by the findings from SEM, such that *sex* was related to both *religiosity* and *self-efficacy*.

An independent-samples t-test was conducted to compare religiosity in males and in females. There was a significant difference in the scores for female ( $\bar{x} = 2.51$ ,  $s = 0.87$ ) and male ( $\bar{x} = 2.97$ ,  $s = 0.77$ ) conditions;  $t(405) = 5.679$ ,  $p = 0.00$ . This meant the male respondents were more religious compared to the females. This supported literature that indicated greater religious involvement among women than with men (Argyle & Beit-Hallahmi, 1975; Bengtson et al, 1977; Blazer & Palmore, 1976; Cornwall, 1989; de Vaus & McAllister, 1987; Koenig et al. 1988; Levin & Taylor, 1993; Levin et al., 1994; Taylor, 1992).

Literature were inconclusive on which is *sex* achieved higher *self-efficacy* scores and this also depended on what type of *self-efficacy* is being examined. For the case of this study, findings generally showed a significant relationship between *sex* and *self-efficacy*, supporting literature (Britner & Parajes, 2001; Chung, 2007; Huang, 2012; Junge & Dretzke, 1995; Rovai & Baker, 2005).

The fourth hypothesis, *H4: Respondent's individual background is significantly related to their network attributes*, proposed a significant association between the individual background characteristics of the Filipino youth and their social network's attributes. SEM results supported this, illustrating a significant relationship between *educational attainment* and *network size*. This is in agreement with literature that has identified a positive connection between the two (Gang & Zimmermann, 2000). This finding could go both ways: in some cases, an increase in *educational attainment* led to a larger *network size*. *Educational attainment* may be perceived to carry opportunities that come from having a larger *network size* (Lai et al., 1998). On the other hand, an inverse relationship could also be observed, where an increase in *educational attainment* indicated a smaller *network size* (Fischer, 2009). In the context of the study, results have shown that the Filipino youth's risky sexual behavior social network size was more or less composed only of one network member, and the largest percentage of respondents were composed of college graduates. From this, it can be surmised that at a college level of education, the Filipino youth's network size for discussing risky sexual behavior was relatively small.

One of the primary marks of this study is how an individual's background, and beliefs, as well as their social network, are each significantly related to their Risky Sexual

Behavior. The findings of this study partially supported H7, H8, and H9 which proposed that the individual's background, social network attributes, and beliefs are all significantly related to Risky Sexual Behavior.

The seventh hypothesis, *H7: Respondent's Individual Background is significantly related to their Risky Sexual Behavior*, proposed a significant relationship between the individual backgrounds of the Filipino youth and their risky sexual behavior. This was partially supported in the study such that *sex* and *education* was significantly associated with *risky sexual behavior*.

Males were found to have higher risky sexual behavior. Further analysis using SPSS was made. An independent-samples t-test was conducted to compare the *risky sexual behavior* in male and female. There was a significant difference in the scores for female ( $\bar{x} = 11.53$ ,  $s = 4.39$ ) and male ( $\bar{x} = 12.64$ ,  $s = 5.21$ ) conditions;  $t(405) = 2.330$ ,  $p = .02$ . This study found male youth to practice *risky sexual behavior* more than their counterpart, supporting some literature stating *men* are a better predictor of *risky sexual behavior* (Belgrave et al., 2000; Fentahun & Mamo, 2014; Klein et al., 1993; Lewis et al., 2007; Locke et al., 2005; Luder et al., 2011; Ludwig & Pittman, 1999; Shearer et al., 2005), that may be due to local context (Cruz, Laguna, & Raymundo, 2001; Medina, 2001; Santa Maria, 2002).

*Educational attainment* was also significantly related to their *risky sexual behavior*. This finding supported a significant association between *educational attainment* and *risky sexual behaviors* (Kalil & Kunz, 1999; Kelly et al., 1995; Mahdavian & Zolala, 2017).

The eighth hypothesis, *H8: Respondent's network attributes are significantly related to their risky sexual behavior*, presumed that a significant relationship existed between the risky sexual behavior social networks of the Filipino youth and their likelihood of engaging in risky sexual behaviors. This was partially supported by the SEM model, presenting *network size* to be significantly associated with *risky sexual behavior* as a whole, which was supportive of literature indicating these variables' relation (Amirkhanian, 2014; Latkin et al., 2003; Schneeberger et al., 2004; Dorsey et al., 1999; Martino et al., 2011; Neblett et al., 2011). These deduced that a larger *network size* increased the chance of the individual to perform *risky sexual behaviors*. On account of the results where the network size of the sample was small (1 network member; compared to the highest possible number of network members: 5), findings appeared to be more or less in consonance with literature because the results showed that their risky sexual behavior score was low, indicating that they are not very risky.

The ninth hypothesis, *H9: Respondent's Individual Belief is significantly related to their Risky Sexual Behavior*, proposed a significant relationship between the individual beliefs of the Filipino youth and their risky sexual behavior. *Self-efficacy* was significantly related to *risky sexual behavior*. This finding supported literature (Bandura et al., 1994; Carvajal et al., 1999; Dilorio et al., 2001; Jemmott et al., 1992; Kasen et al., 1992; Santelli et al., 2004; Sionéan et al., 2002; Thomas & Jason, 2000; Wiener et al., 2007).

AMOS identified relations to variables that would give the model a better fit. These were the relationships between *religiosity* and *self-efficacy* and between *gender* and *religiosity* and *self-efficacy*. These relationships were logically meant to be

associated as they belonged to the same group of variables. *Educational attainment* and *age* were both individual background variables while *religiosity* and *self-efficacy* were the two variables under individual beliefs. These variables were not part of the hypotheses because the current study was examining the relationship between individual characteristics, and social network characteristics to risky sexual behavior.

### C. Synthesis

Statistics consistently show the Philippines having the fastest-growing HIV epidemic that mostly thrives among its youth, and this calls for an intervention. The current study attempted to delve into social networks as a means of intervention for the Filipino youth to reduce risky sexual behavior. Among the personal characteristics of the youth, their biological sex was found to be a predictor of risky sexual behavior such that males tended to engage more in different kinds of sexual intercourse than women do, and this corresponds to the current circumstances of the Filipino youth's sexual behavior as pointed out by the most recent Young Adult Fertility and Sexuality (YAFS) study. It has been embedded in our culture that males are more encouraged to engage in sexual activities (Cruz et al., 2001; Medina, 2001; Santa Maria, 2002) than females. This affirms the urgency for interventions to focus more on the male Filipino youth.

Self-efficacy was highlighted as the only individual belief variable that was significantly linked to risky sexual behavior, which implies that the amount of confidence the Filipino youth have in their capacity to have control over their actions can determine whether they will engage in risky sexual behavior.

This suggests that in addition to the influence of one's social network on their likelihood of engaging in RSB, the Filipino youth still have the agency to engage in the

behaviors that they desire. If they intend to perform risky sexual behaviors in spite of sex being a taboo, they will do it. This is why it is a necessity to target their intention to perform risky sexual behaviors and instill in them a safe sex culture. Part of instilling this culture is educating them about sex-related information which increases their awareness and knowledge regarding the risks that the behavior carries and what can be done to avoid them.

Findings demonstrated that educational attainment significantly predicted risky sexual behavior. Altogether, this continues to highlight the need for quality sex education, especially among the youth, to cultivate their sense of safety when it comes to engaging in sexual behaviors. The government has initiated measures that aim to inculcate safe sex. As of 2018, the Department of Education has issued policy guidelines on DepEd Order No. 31 also known as Implementation of the Comprehensive Sexuality Education (CSE), a government policy that aims to curb the increasing cases of teenage pregnancy and HIV-positive youth in the Philippines (Hernando-Malipot, 2019) through education in public and private elementary, junior, and senior high schools, as well as in alternative learning systems (ALS), Special Education learning centers (SPED), indigenous learning systems (ILSs), the Madrasah Education Program (MEP), and state and local universities and colleges (SUCs/LUCs) (Hernando-Malipot, 2019).

When it comes to educating oneself, the results showed that the Filipino youth used their social networks to discuss risky sexual behavior with them, taking into account the high scores of network attributes in the study. Respondents were found to be very close with their network, had similar opinions with them, and had very cohesive relations

with others in their risky sexual behavior network. Though, pertaining to the reduction of the behavior, only network size significantly influenced it.

Moreover, guided by Rye et al. (2001)'s use of the concepts from the Theory of Planned Behavior as indicators of risky sexual behavior, the study linked the dynamics of information sharing and discussion of risky sexual behavior with the actual reduction of the behavior, such that if the social network was actively and frequently used to discuss RSBs, there would be a reduction in their RSB. The findings confirm that the Filipino youth do turn to their network for sex-related information. Albeit, they only discuss this information with generally one confidant, and this furthers the repressive forces that continue to treat sex as a taboo. Discourse through social networks is important in preventing the Filipino youth from engaging in risky sexual behavior that could lead to the contraction of infections or unwanted pregnancy. However, it should be noted that the number of individuals whom the youth discuss the topic with should be kept at a minimum, taking into account how larger networks allow for riskier sexual behavior. The findings demonstrated that the youth is not completely silenced, given that they confide in their social networks for RSB. Nevertheless, this still reinforces sex as a taboo.

These outcomes present a heavy burden on Philippine society and those who are at the forefront of shaping it. Sexual practices in the country are heavily influenced by culture. In spite of cultural influences, the study recognizes that personal agency is also a necessary component in the reduction of risky sexual behavior. If a healthier change in sexual discourse is desired, interventions must concentrate not only on the youth's health but also on their way of life

## VI. SUMMARY AND CONCLUSION

### A. Summary

The study aimed to produce a model that explained how the social networks of the Filipino youth influenced their reduction of risky sexual behaviors. In pursuance of the research question, the researchers (1) determined the Filipino youth's individual background, social media practice, individual beliefs, and intention, attitude, and subjective norms about risky sexual behaviors; (2) described the social networks of the Filipino youth when it comes to the discussion of risky sexual behaviors; (3) illustrated the Filipino youth's risky sexual behavior social network structure in terms of its size, closeness, homophily, and density; and (4) link the Filipino youth's social network with their reduction of risky sexual behaviors.

#### *1. The Filipino Youth and their Risky Sexual Behavior*

The average age of the Filipino youth surveyed was 23 years old, and the majority of them were aged 18 to 24. More than half were female, and 3 out of 10 respondents finished college. Almost all of the respondents utilized social media on a daily basis and spent an average of four hours per day using it. They only talked to their social network online from time to time, and found social media to be only somewhat important in their everyday lives.

With reference to their individual beliefs, the respondents mentioned they took part in religious activities moderately. Overall they fairly believed in their ability to perform certain behaviors aimed towards specific goals, as presented by their self-efficacy scores.

Half of the sample have had sexual experience before. Focusing on their risky sexual behavior, they were generally inclined to perform safe sexual behaviors and evaluated them as good behaviors. They also relatively agreed that the people they considered to be important to them thought they should practice safe sexual behaviors. Overall, the respondents exhibited reduced likelihood of engaging in risky sexual behaviors.

### *2. Characteristics of Risky Sexual Behavior Network of the Filipino Youth*

8 out of 10 respondents reported having a social network for risky sexual behavior, connoting that they have discussed the matter before with other individuals. Almost all of the risky sexual behavior discussants or alters of the respondents were 18 years old and above in age. Most have finished college and were first met by the respondents at their educational institution. Less than half of the alters were considered as friends of the respondents. Chat or instant messaging was the most frequently used method of reaching out to them, yet they often talked about risky sexual behavior with them offline. They perceived their alters to be quite knowledgeable and familiar about risky sexual behaviors.

### *3. Risky Sexual Behavior Network Structure of the Filipino Youth*

The Filipino youth's risky sexual behavior network comprised of only one confidant. Regardless of network size, they have a relatively close and dense relationship, in which they shared highly similar opinions on risky sexual behavior. Given the sensitivity of the topic, discussions on risky sexual behavior remained tight within the networks of the Filipino youth, contributing to its suppression.

*4. Connections among the Filipino Youth's Background, Beliefs, Social Media Practice, and Social Network with their Reduction of Risky Sexual Behavior*

The Filipino youths' background and beliefs had a direct effect on their risky sexual behavior. Specifically, their sex, educational attainment, religiosity, and self-efficacy were significantly related to their risky sexual behavior. Their background and beliefs were also interconnected with one another. Specifically, sex was related to both their religiosity and self-efficacy. When it comes to direct predictors of RSB, findings suggested sex, educational attainment, self-efficacy, as well as educational attainment through network size to be significant driving factors that could help in reducing risky sexual behavior. The results of the statistical tests provided evidence to partially support H1, H4, H7, H8, and H9. No direct relations were found for relationships between the youth's social media practice and background, beliefs, and social network, as well as their beliefs with network, therefore disproving H2, H3, H5, and H6.

#### B. Conclusion

Findings and literature agree on this positive relationship between network size and RSB, attributing it to how an increase in the number of individuals in one's RSB network increases his or her chance of engaging in RSB due to being exposed to more potential risk factors, in contrast to having only one discussant. Network size mediated educational attainment and RSB and presented a direct link from the individual to his or her network and then to his or her risk sexual behavior. This affirms how the subject is something one only discusses with a few people, and through this, the youth's engagement in risky sexual behaviors is reduced.

Multiple factors contributed to the reduction of risky sexual behavior: sex, educational attainment, network size, self-efficacy, and religiosity. This articulates how RSB is a multi-faceted concept and shows how both people and culture contribute to RSB.

The Filipino youth have the agency to change and learn, seeing as how they demonstrated a high belief in their own capabilities. Nevertheless, policy and decision makers have a bigger responsibility to combat RSB in the youth by targeting their health and culture to convince them to practice safer sex. They must be cognizant of how RSB is not only concentrated on the individual, and that the people they discuss RSB with play an important role in their sexual practices.

Healthy discourse on sex must be encouraged, apart from implementing quality sex education, by the dominating institutions in the country: politics, family, and the church. With the Philippine society still rooted in traditional culture, it would take a lot for these changes to happen. Recognizing the issue at hand is a small but significant step towards breaking the stigma of talking about sex and mitigating HIV/AIDS, especially amongst the youth.

## VII. IMPLICATIONS AND RECOMMENDATIONS

### A. Theoretical Issues

In studying the social circles of the Filipino youth, the researchers concentrated on the Social Network Theory to guide them in understanding how these circles contributed to their reduction of risky sexual behaviors. In this undertaking, a model was created through Structural Equation Modelling (SEM), explaining the relation of the Filipino youth's background, beliefs, social media practice, and social network and if these played a role in their discontinuation or avoidance of such behaviors. The framework that was modified through SEM was formed without a specific Social Network Theory paradigm. The study established its own framework, guided by the concepts of the Social Network Theory and by literature on the subject matter. Moreover, the researchers formed their own model in the hopes of tailoring it more to the local context.

Through bivariate analysis and SEM, the researchers were able to improve on their conceptual model and develop a model that encapsulates significant individual, social network, and behavioral relationships. Should future researchers follow the same approach in formulating a study framework, it is recommended that they exhaust all means and explore all literature completely, especially in the Philippine context. Alternative to this process is to follow the framework of already-established Social Network Theory models, such as the Network Theory of Social Capital.

The researchers are cognizant of the many properties of social networks. It is recommended that future researchers specify the aspects of social networks that they truly

want to investigate and make sure that measures for such are clear and have been thoroughly tested beforehand.

Lastly, previous studies on the Social Network Theory have applied it to particular cohorts more than general communities (i.e. transgender people, intravenous drug users, men who have sex with men, etc.). The study suggests that this may be applied by future research in the Philippine context.

### B. Methodological Issues

The researchers employed primarily a quantitative approach in this study. They recognize that it would be more fruitful to incorporate a qualitative approach to supplement the data collected especially given its topic. Further, in employing a quantitative research design, it is more than important to lay out all the things needed in order to make a sound methodology. It is then highlighted to be realistic in every manner of it—from preparation to data collection and analysis.

For the research instrument, the researchers had come across a few issues with regard to the respondents understanding some questions. This was mainly due to the language barrier and the different socio-economic and demographic subgroups. Future researchers, therefore, should modify their research instrument to fit the context of their study. Furthermore, measures for the network attributes were not fully tested pre-data collection. The study recommends that pretesting be continuously conducted until the instrument is completely sound.

For the units of analysis, the researchers applied Arnett's concept of "emerging adulthood" to specify the definition of youth. It would be more preferred to have a local

definition of the term for it to add to the growing local literature on youth. Researchers could refine their sample by employing a more systematic way of defining their units of analysis.

For the sampling scheme, future researchers can conduct multi-stage sampling to fully represent their sample. Aside from that, the researchers reiterate the importance of preparing and having back-up plans for unexpected scenarios, such as having back-up barangays and hired survey enumerators.

In terms of the actual data collection, a number of things may have affected the manner it was conducted. This includes environmental stressors like the weather, socio-cultural factors like language, and biological factors like sex.

To aid the data gathering process, survey enumerators were hired. If conducted again, the researchers recommend hiring more survey enumerators and conducting more orientations and practice interviews with them for optimal efficiency in data gathering. The researchers also recommend sending out letters and giving courtesy-calls to the barangay officials much ahead of time for them to be aware of the role they have to play as a sample to the study, should they approve.

Lastly, the time of the data gathering was one of the crucial factors faced by the researchers in data collection. Considering the youth was the unit of analysis, it was difficult to secure willing respondents, given the sensitivity of the topic and that most of them were in school or at work. For future studies, the researchers would recommend conducting surveys in schools and/or clinics. This is mainly because those who would benefit the most from the study are the youth who are in school and those who may be more knowledgeable about risky sexual behaviors who may frequent the clinic. Other

than the location, choosing the right time—such as weekends—to conduct the survey may be more apt.

### C. Practical Issues

Social networks have been found to be predictors of risky sexual behavior. Aside from its theoretical contributions to social network theory, the study can contribute to localizing concepts, which were heavily anchored from the West. Specifically, aligning the study to a target sample who can best serve the purpose.

Laying the groundwork for further social network studies on Filipino youth, the model used in the study could be further developed and utilized to understand the Filipino youth's social network and ultimately help in reducing their risky sexual behaviors.

Given that the youth are the main stakeholders of this study, the researchers suggest that they continue to discuss risky sexual behaviors among their social circle as a fundamental step in the gradual acceptance of open sexual discourse in the Philippines. However, it is recommended that they limit their discussion of risky sexual behaviors to a few individuals only, taking into account the significance of a small network size in their reduction of such behaviors as expressed by the findings of this study.

Risky sexual behaviors pose health issues, especially for the youth. Bearing in mind the findings of the study, it is recommended that health clinics and professionals look into the social networks of the youth and disseminate information in groups also, aside from educating them individually.

To further propagate this, those who are principal and core to establishing programs and policy-making should prioritize sexual health especially amongst the youth

by providing and catering services to them and prioritizing their social networks. In a broader view, it is imperative to emphasize the nationwide initiative for sex education.

The researchers suggest utilizing the vital influence of social institutions such as the Church and families to break into the lack of healthy sexual discourses in the Philippines by openly discussing it and consequently lessening its stigma.

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APPENDIX A: CRONBACH'S ALPHA SCORES FOR SCALES

<b>Scale</b>	<b>Cronbach's Alpha</b>	<b>Number of Items</b>
Religiosity	.740	4
Social Media Intensity	.714	3
Self-Efficacy	.698	8
RSB Intention	.643	7
RSB Attitude	.689	7
RSB Norms	.714	7

## APPENDIX B: RESEARCH INSTRUMENT

Social Network Analysis of the Filipino Youth's Reduction of Risky Sexual Behavior

Questionnaire # \_\_\_\_\_

INTERVIEW DETAILS				
Interviewer's name:		Survey area:		
Date of interview:		Time started:		Time ended:

INTRODUCTION	
<p><b>FOR THE HOUSEHOLD</b></p> <p>Good day, I am <i>[interviewer]</i>, and I am conducting interviews for a study on the Filipino Youth's Reduction of Risky Sexual Behaviors through their Social Networks. You have been chosen at random as part of our sample. Because our study focuses on the youth, we would like to ask if there is someone in your household who is aged 18 to 30?</p> <p><b><i>(If there is more than one household member aged 18 to 30 years old)</i></b> Which of them recently had their birthday? May we interview him/her?</p>	
<p><b>FOR THE RESPONDENT</b></p> <p>Good day, I am <i>[interviewer]</i>, and I am conducting interviews for a study on the Filipino Youth's Reduction of Risky Sexual Behaviors through their Social Networks. Thank you for your time! We are grateful for your participation in the study. This interview will only take 10-20 minutes. Your answers will be kept confidential and will solely be used for academic purposes.</p>	
INTERVIEW QUESTIONS	RESPONDENTS' ANSWER
<p>I. Have you heard of risky sexual behaviors? These are behaviors that are related to: getting STIs (sexually transmitted infections), getting HIV (human immunodeficiency virus), and unintended pregnancy all because contraceptives (like condoms, birth control pills, etc.) were not used during sex.</p>	<p>Yes <b><i>(Proceed to PERSONAL INFORMATION)</i></b></p>
	<p>No <b><i>(Terminate)</i></b></p> <p>Thank you for your time! However, the rest of the questions are about risky sexual behavior.</p>

I. PERSONAL INFORMATION			
1. Name <b><i>(Optional)</i></b> :		2. Age:	3. Sex: ① Male      ② Female
4. Educational Attainment: <b><i>(SHOWCARD 1)</i></b>	① No formal education    ⑥ Some vocational ② Some elementary      ⑦ Vocational ③ Elementary            ⑧ Some college ④ Some high school      ⑨ College ⑤ High school            ⑩ Higher Degree	5. Monthly Income: <b><i>(SHOWCARD 2)</i></b>	① Under PHP 7,890 ② PHP 7,890 to PHP 15,780 ③ PHP 15,780 to PHP 31,560 ④ PHP 31,560 to PHP 78,900 ⑤ PHP 78,900 to PHP 118,350 ⑥ PHP 118,350 to PHP 157,800 ⑦ PHP 157,800 and above ⑧ I don't know/cannot disclose

II. RELIGIOSITY					
For this next section, we're going to talk about religiosity or your religious orientations and involvement. For each statement, kindly tell us whether you <b>1 - always, 2 - usually, 3 - about half of the time, 4 - seldom, or 5 - never</b> do them. <b><i>(SHOWCARD 3)</i></b>	Always	Usually	Some-times	Seldom	Never
6. Attend religious or spiritual services	①	②	③	④	⑤
7. Pray or meditate	①	②	③	④	⑤
8. Talk to others about religious or spiritual concerns	①	②	③	④	⑤
9. Talk with a religious or spiritual leader (minister/priest)	①	②	③	④	⑤

BELLO, N. I. D. &amp; CALAYAN, P.A.J. (2020)

III. SOCIAL MEDIA				
Next, we'll ask about your social media use.				
10. Do you use social media?	① Yes ② No <i>(Proceed to V. Self-Efficacy)</i>			
11. How many hours do you actively use social media during a typical day? <i>(use format hh:mm)</i>				
IV. SOCIAL MEDIA INTENSITY				
These questions will ask about the importance of social media in your day-to-day life. Kindly answer how true to you the indicated statements are with 1 – exactly true, 2 – moderately true, 3 – hardly true, 4 – not true at all. <i>(SHOWCARD 4)</i>	Exactly true	Moderately true	Hardly true	Not true at all
12. Using social media is part of my everyday activity.	①	②	③	④
13. I am proud to tell people I'm on social media.	①	②	③	④
14. I feel out of touch when I haven't logged onto my social media accounts for a while.	①	②	③	④
V. SELF-EFFICACY				
For the next section, we'll measure your self-efficacy or the belief in your ability to succeed in achieving a goal or task. Kindly tell us how definitive you are by answering whether it is 1 - exactly true, 2 - moderately true, 3 - hardly true, or 4 - not true at all for you. <i>(SHOWCARD 4)</i>	Exactly true	Moderately true	Hardly true	Not true at all
15. I can always manage to solve difficult problems if I try hard enough.	①	②	③	④
16. If someone opposes me, I can find the means and ways to get what I want.	①	②	③	④
17. It is easy for me to stick to my aims and accomplish my goals.	①	②	③	④
18. I am confident that I could deal efficiently with unexpected events.	①	②	③	④
19. Thanks to my resourcefulness, I know how to handle unforeseen situations.	①	②	③	④
20. I can remain calm when facing difficulties because I can rely on my coping abilities.	①	②	③	④
21. When I am confronted with a problem, I can usually find several solutions.	①	②	③	④
22. I can usually handle whatever comes my way.	①	②	③	④

VI. RISKY SEXUAL BEHAVIORS	A. INTENTION					B. ATTITUDES					C. SUBJECTIVE NORMS				
23. Have you ever had any sexual experience (whether he/she has had any sexual relation)?	① Yes		② No												
For this portion, we will ask how you think about and perceive risky sexual behaviors. <b>You are not expected to have had any sexual experience before to answer this part.</b> Again, risky sexual behaviors are behaviors that are related to: getting STIs (sexually transmitted infections), getting HIV (human immunodeficiency virus), and unintended pregnancy all because contraceptives (like condoms, birth control pills, etc.) were not used during sex.	<i>(please answer ALL items under this column first)</i> If I were to have sex, I would prefer					<i>(answer ALL items under this column next)</i> I think [behavior] is					<i>(answer ALL items under this column last)</i> Most people who are important to me think I should be				
From the 5-point scale in each concept, choose from the following that best represents your opinion.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Very Good	Good	Neutral	Bad	Very Bad	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
For <b>intention and norms</b> , kindly indicate whether you <b>Strongly Agree (SA)</b> , <b>Agree (A)</b> , <b>Neutral (N)</b> , <b>Disagree (D)</b> , or <b>Strongly Disagree (SD)</b> .															
For <b>attitudes</b> , kindly indicate whether you think the behavior stated is <b>Very Good (VG)</b> , <b>Good (G)</b> , <b>Neutral (N)</b> , <b>Bad (B)</b> , or <b>Very Bad (VB)</b> .															
Rest assured that your answers will remain confidential and will be solely used for academic purposes.															
24. Using condoms	SA	A	N	D	SD	VG	G	N	B	VB	SA	A	N	D	SD
25. Using birth control pills	SA	A	N	D	SD	VG	G	N	B	VB	SA	A	N	D	SD
26. Having only one sexual partner at a time	SA	A	N	D	SD	VG	G	N	B	VB	SA	A	N	D	SD
27. Getting an HIV test	SA	A	N	D	SD	VG	G	N	B	VB	SA	A	N	D	SD
28. Asking my partner to have an HIV test	SA	A	N	D	SD	VG	G	N	B	VB	SA	A	N	D	SD
29. Talking to my partner about safe sex	SA	A	N	D	SD	VG	G	N	B	VB	SA	A	N	D	SD
30. Having sex in private	SA	A	N	D	SD	VG	G	N	B	VB	SA	A	N	D	SD

VII. SOCIAL NETWORKS												
In this section, can you tell me who you have discussed or can discuss risky sexual behaviors with?												
31. Name/ Codename  <i>(list names/ codenames first before preceding the columns)</i>	32. Age	33. Educational Attainment <b>(SHOWCARD 1)</b>  ① No formal education ② Some elementary ③ Elementary ④ Some high school ⑤ High school ⑥ Some vocational ⑦ Vocational ⑧ Some college ⑨ College ⑩ Higher Degree	34. Where did you get to know this person? <b>(SHOWCARD 5)</b>  ① From my family (family member) ② From school (classmate, schoolmate) ③ From my organization ④ From my place of work ⑤ From my neighborhood ⑥ From social media ⑦ Others (specify)	35. What is your relationship with this person? <b>(SHOWCARD 6)</b>  ① Family member ② Romantic partner ③ Best friend ④ Friend ⑤ Acquaintance ⑥ Others (specify)	36. How close are you with this person? <b>(SHOWCARD 7)</b>  ① Not close ② Moderately close ③ Close ④ Very close	37. How similar are your thoughts about risky sexual behaviors with this person? <b>(SHOWCARD 8)</b>  ① Dissimilar ② Moderately similar ③ Similar ④ Very similar	38. How likely do you think this person is known by the other people in your network? <b>(SHOWCARD 9)</b>  ① Very unlikely ② Unlikely ③ Likely ④ Very likely	39. On a scale of 1 to 10 with the highest, how much does he/she know about risky sexual behaviors?	40. How often do you communicate risky sexual behaviors with this person <b>OFFLINE?</b> <b>(SHOWCARD 3)</b>  ① Always ② Often ③ Sometimes ④ Rarely ⑤ Never	41. How often do you communicate risky sexual behaviors with this person <b>ONLINE?</b> <b>(SHOWCARD 3)</b>  ① Always ② Often ③ Sometimes ④ Rarely ⑤ Never	42. How do you communicate with this person online? <i>(choose the most frequent)</i> <b>(SHOWCARD 10)</b>  ① E-mail ② Chat/IM ③ Post/Tweet ④ Comments ⑤ Voice call ⑥ Video call ⑦ Others (specify) ⑧ We don't talk online	43. Who among your network does this person know?

Again, we thank you for your participation in this study. Should you have any questions or concerns, kindly contact us at 09167742861 or 09952066159 or email us at [ninabello16@gmail.com](mailto:ninabello16@gmail.com) or [paula.calayan@gmail.com](mailto:paula.calayan@gmail.com).

## APPENDIX C: SHOWCARDS

**SHOWCARD 1**

- ① No formal education
- ② Some elementary
- ③ Elementary
- ④ Some high school
- ⑤ High school
- ⑥ Some vocational
- ⑦ Vocational
- ⑧ Some college
- ⑨ College
- ⑩ Higher Degree

## SHOWCARD 2

- |                            |                                 |
|----------------------------|---------------------------------|
| ① Under PHP 7,890          | ⑤ PHP 78,900 to PHP 118,350     |
| ② PHP 7,890 to PHP 15,780  | ⑥ PHP 118,350 to PHP 157,800    |
| ③ PHP 15,780 to PHP 31,560 | ⑦ PHP 157,800 and above         |
| ④ PHP 31,560 to PHP 78,900 | ⑧ I don't know/ cannot disclose |

## **SHOWCARD 3**

- ① Always
- ② Usually
- ③ Sometimes
- ④ Seldom
- ⑤ Never

## **SHOWCARD 4**

- ① Exactly true
- ② Moderately true
- ③ Hardly true
- ④ Not true at all

## **SHOWCARD 5**

- ① From my family  
*(family member)*
- ② From school  
*(classmates, schoolmate)*
- ③ From my  
organization
- ④ From my place  
of work
- ⑤ From my  
neighborhood
- ⑥ From social  
media
- ⑦ Others *(specify)*

# **SHOWCARD 6**

- ① Family member
- ② Romantic partner
- ③ Best friend
- ④ Friend
- ⑤ Acquaintance
- ⑥ Others (specify)

## **SHOWCARD 7**

- ① Not close
- ② Moderately close
- ③ Close
- ④ Very close

## **SHOWCARD 8**

- ① Dissimilar
- ② Moderately similar
- ③ Similar
- ④ Very similar

## **SHOWCARD 9**

- ① Very unlikely
- ② Unlikely
- ③ Likely
- ④ Very likely

## **SHOWCARD 10**

- ① E-mail
- ② Chat/IM
- ③ Post/Tweet
- ④ Comments
- ⑤ Voice call
- ⑥ Video call
- ⑦ Others (specify)
- ⑧ We don't talk online

APPENDIX D: LAMBDA DISTRIBUTION TABLES FOR  
VARIABLES TESTED WITH SEX

*Sex and Religiosity*

Religiosity	Sex			
	Male		Female	
	f	%	f	%
Always	13	19.40%	54	80.60%
Usually	71	42.80%	94	56.60%
Sometimes	85	61.20%	54	38.80%
Seldom	23	67.60%	11	32.40%
Never	0	0.00%	2	100.00%
Total	192	47.10%	215	52.70%
Lambda	$\lambda = .058, n = 408, p = .262$			

*Sex and Self-efficacy*

Self-Efficacy	Sex			
	Male		Female	
	f	%	f	%
Exactly true	103	46.20%	120	53.80%
Moderately true	85	47.00%	95	52.50%
Hardly true	4	100.00%	0	0.00%
Not true at all	0	0.00%	0	0.00%
Total	192	47.10%	215	52.70%
Lambda	$\lambda = .005, n = 408, p = .317$			

*Sex and Social Media Use*

Social Media Use	Sex			
	Male		Female	
	f	%	f	%
Yes	167	45.30%	202	54.70%
No	25	65.80%	12	31.60%
13	0	0.00%	1	100.00%
Total	192	47.10%	215	52.70%
Lambda	$\lambda = .026, n = 408, p = .317$			

*Sex and Frequency of Online Communication*

Frequency of Online Communication	Sex			
	Male		Female	
	f	%	f	%
Always	149	44.70%	184	55.30%
Often	22	64.70%	12	35.30%
Sometimes	12	46.20%	13	50.00%
Rarely	2	28.60%	5	71.40%
Never	7	87.50%	1	12.50%
Total	192	47.10%	215	52.70%
Lambda	$\lambda = .013, n = 408, p = .317$			

*Sex and Social Media Intensity*

Social Media Intensity	Sex			
	Male		Female	
	f	%	f	%
Exactly true	97	48.00%	105	52.00%
Moderately true	65	45.80%	76	53.50%
Hardly true	27	50.00%	27	50.00%
Not true at all	3	30.00%	7	70.00%

Total	192	47.10%	215	52.70%
Lambda	$\lambda = .005, n = 408, p = .317$			

*Sex and Network Size*

Network Size	Sex			
	Male		Female	
	f	%	f	%
0	23	41.80%	32	58.20%
1	95	44.60%	118	55.40%
2	28	50.00%	27	48.20%
3	18	58.10%	13	41.90%
4	7	50.00%	7	50.00%
5	21	53.80%	18	46.20%
Total	192	47.10%	215	52.70%
Lambda	$\lambda = .005, n = 408, p = .317$			

*Sex and Network Closeness*

Network Closeness	Sex			
	Male		Female	
	f	%	f	%
0.00	23	41.80%	32	58.20%
0.25	1	33.30%	2	66.70%
0.50	9	39.10%	14	60.90%
0.63	2	33.30%	4	66.70%
0.65	0	0.00%	1	100.00%
0.67	4	100.00%	0	0.00%
0.70	1	100.00%	0	0.00%
0.75	45	42.90%	60	57.10%
0.80	5	55.60%	4	44.40%
0.81	1	50.00%	1	50.00%

0.83	2	40.00%	3	60.00%
0.85	1	50.00%	1	50.00%
0.88	4	44.40%	5	55.60%
0.90	3	75.00%	1	25.00%
0.92	3	50.00%	3	50.00%
0.94	1	100.00%	0	0.00%
0.95	1	25.00%	3	75.00%
1.00	86	51.20%	81	48.20%
Total	192	47.10%	215	52.70%
Cramer's V	V = .138, n = 408, p = .997			

*Sex and Network Homophily*

Network Homophily	Sex			
	Male		Female	
	f	%	f	%
0.00	23	41.10%	33	58.90%
0.25	9	47.40%	10	52.60%
0.38	2	100.00%	0	0.00%
0.44	1	100.00%	0	0.00%
0.50	32	47.80%	35	52.20%
0.55	1	100.00%	0	0.00%
0.58	2	50.00%	2	50.00%
0.60	1	50.00%	1	50.00%
0.63	2	66.70%	1	33.00%
0.65	2	100.00%	0	0.00%
0.67	4	100.00%	0	0.00%
0.70	2	50.00%	2	50.00%
0.75	54	40.90%	78	59.10%
0.80	5	83.30%	1	16.70%
0.81	1	50.00%	1	50.00%

0.83	3	60.00%	2	40.00%
0.85	4	57.10%	3	42.90%
0.88	6	60.00%	4	40.00%
0.90	1	50.00%	1	50.00%
0.94	0	0.00%	1	100.00%
0.95	1	50.00%	1	50.00%
1.00	35	46.70%	39	52.00%
1.25	1	100.00%	0	0.00%
Total	192	47.10%	215	52.70%
Lambda	$\lambda = .004, n = 408, p = .317$			

*Sex and Network Density*

Network Density	Sex			
	Male		Female	
	f	%	f	%
0.00	42	49.40%	43	50.60%
0.10	0	0.00%	1	100.00%
0.17	0	0.00%	2	100.00%
0.30	0	0.00%	1	100.00%
0.33	4	50.00%	4	50.00%
0.40	4	66.70%	2	33.30%
0.50	1	50.00%	1	50.00%
0.60	1	50.00%	1	50.00%
0.67	4	57.10%	3	42.90%
0.70	0	0.00%	2	100.00%
0.80	0	0.00%	1	100.00%
0.83	1	100.00%	0	0.00%
0.90	1	100.00%	0	0.00%
1.00	134	46.40%	154	53.30%
Total	192	47.10%	215	52.70%

Cramer's V	V = .113, n = 408, p = .997
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*Sex and Risky Sexual Behavior*

RSB	Sex			
	Male		Female	
	f	%	f	%
Strongly agree/Very good	28	39.40%	43	60.60%
Agree/Good	116	47.70%	126	51.90%
Neutral	40	47.60%	44	52.40%
Disagree/Bad	5	71.40%	2	28.60%
Strongly disagree/Very bad	3	100.00%	0	0.00%
Total	192	47.10%	215	52.70%
Cramer's V	V = .096, n = 408, p = .486			

## APPENDIX E: FIELD MANUAL

### **Let's Talk About Sex: A Social Network Analysis of the Filipino Youth's Reduction of Risky Sexual Behavior**

#### **I. BACKGROUND OF THE STUDY**

The study aims to answer the following research question:

RQ: *How do the social networks of the Filipino youth affect their reduction of risky sexual behaviors?*

This study's objectives-are the following:

1. To determine the Filipino youth's:
  - a. Socioeconomic characteristics
  - b. Social media practice
  - c. Self-efficacy
  - d. Intention, attitude, and subjective norms towards risky sexual behaviors
2. To describe the social networks of the Filipino youth when it comes to the discussion of risky sexual behaviors
3. To illustrate the Filipino youth's risky sexual behavior social network structure in terms of its:
  - a. Network size
  - b. Network closeness
  - c. Network homophily
  - d. Network density
4. To link Filipino youth's social network with their reduction of risky sexual behavior

#### **II. METHODOLOGY**

This quantitative study employs a survey method using a combination of self-administered and interviewer-administered questionnaire for data collection. Respondents must be residents of Quezon City and the City of Manila who are between the ages 18 and 30.

This study uses multi-stage sampling, and combines purposive, simple random, and cluster sampling techniques- as seen in the sampling scheme to follow.

In the first stage of the sampling, Quezon City and the City of Manila were purposively chosen as the main survey area. This is because Quezon City and the City of Manila have the highest rate of HIV cases in Metro Manila (Geronimo, 2015).

For the second stage, all the districts of Quezon City and the City of Manila were chosen to fully exhaust the area. In the fourth stage, one (1) barangay in each district of Quezon City and the City of Manila were chosen through simple random sampling. And finally for the fifth stage, two (2) residential streets in each sample barangay of Quezon City were chosen using simple random sampling. For the City of Manila, the streets will be chosen in the barangay area directly. The table below lists the survey sites for this study.

**Quezon City**

District	Barangay	Streets
1st district	San Isidro Labrador	Liberation
		Bayani
2nd district	Batasan Hills	Saret
		Dona Justina
3rd district	Claro (Quirino 3-B)	Aguho
		Narra
4th district	San Vicente	San Vicente
		San Vicente
5th district	Fairview	Edsel
		Chelsea St.
6th district	Apolonio Samson	Grace Ave.
		Opal St.

**City of Manila**

District	Barangay
1st District (Tondo, Western area)	Barangay 25
2nd District (Tondo, Eastern area)	Barangay 253
3rd District (Binondo, Quiapo, San Nicholas, Santa Cruz)	Barangay 372
4th District (Sampaloc)	Barangay 421
5th District (Ermita, Intramuros, Malate, Paco [southern area], Port Area, San Andres Bukid [including Manila South Cemetery])	Barangay 825
6th District (Paco [northern area], Pandacan, San Miguel, Santa Ana, Santa Mesa)	Barangay 834

Within each sample street, cluster sampling will be used, i.e., all households will be covered. There will only be one respondent per household. If there are two or more household members who are eligible for the interview, the respondent will be selected using the last birthday method. If the household member chosen refuses to be interviewed or is not available for the interview after two call backs within day of data gathering, the household member who celebrated her/his birthday immediately before the original respondent will be chosen as replacement.

### **III. THE SURVEY QUESTIONNAIRE**

This is an interview-administered questionnaire with one (1) section that is self-administered.

The survey questionnaire consists of four (4) pages and 110 questions grouped into seven (7) sections. The sections and their corresponding number of questions are as follows:

Section Title	Number of Questions	Question Numbers
Interview Details		NAP
Introduction for the Household		NAP
Introduction for the Respondent	1	NAP
Respondent's Personal Information	5	1-5
Respondent's Religiosity	4	6-9
Respondent's Social Media Use	2	10-11
Social Media Intensity	3	12-14
Self-efficacy	8	15-22
Risky Sexual Behaviors ( <i>self-administered</i> )	22	23-30c
Social Networks	65	31a-43e

The items per section are as follows:

**Interview Details:** Interviewer's name, survey area, date of interview, time started, time ended

**Introduction for the Household:** Request for permission to conduct interview in the household

**Introduction for the Respondent:** Request for permission to interview respondent, screen question on familiarity with risky sexual behaviors

**Respondent's Personal Information:** Name, age, sex, highest educational attainment, monthly income

**Respondent's Religiosity:** Whether or not the respondent attends religious or spiritual services, prays or meditates, talks to others about religious or spiritual concerns, talks with a religious or spiritual leader (minister/priest)

**Respondent's Social Media Use:** Whether the respondent uses social media, number of hours spent actively using social media

**Social Media Intensity:** Use of social media as part of the respondent's everyday activity, how proud he/she is to tell people he/she is on social media, if he/she feels out of touch when he/she hasn't logged onto his/her social media accounts for a while

**Self-efficacy:** If the respondent can always manage to solve difficult problems if he/she tries hard enough, if he/she can find the means and ways to get what he/she wants if someone opposes him/her, if it is easy for him/her to stick to his/her aims and accomplish his/her goals, if he/she is confident that he/she could deal efficiently with unexpected events, if he/she knows how to handle unforeseen situations through his/her resourcefulness, if he/she can remain calm when facing difficulties because he/she can rely on his/her coping abilities, if he/she can usually find several solutions when he/she is confronted with a problem, if he/she can usually handle whatever comes his/her way

**Risky Sexual Behaviors:** If respondent has had any sexual experience, his/her intention to, attitude towards, and subjective norms about using condoms, using birth control pills, having only one sexual partner at a time, getting an HIV test, asking my partner to have an HIV test, talking to my partner about safe sex, having sex in private

**Social Networks:** The respondent's social network members and their name/codename, age, highest educational attainment, where the respondent got to know the person, relationship with the respondent, how close the respondent is to them, how similar his/her thoughts are about risky sexual behaviors with them, how likely he/she thinks this person is known by the other people in the network, how much they know about risky sexual behaviors, how often respondent communicates risky sexual behavior with them offline and online, the manner of communicating with them online, and which among the respondent's network does the person know

#### IV. SPECIAL INSTRUCTIONS FOR ASKING QUESTIONS

The interviewers should be familiar with the instructions contained in the survey instrument. They should also make use of showcards when indicated to do so, specifically for questions **6-9, 12-22, 31a-43e**.

The study should be introduced to the respondents as follows:

*Good day, I am [interviewer], and I am conducting interviews for a study on Filipino Youth's Reduction of Risky Sexual Behaviors through their Social Networks. Thank you for your time! We are grateful for your participation in the study. This interview will only take 10-20 minutes. Your answers will be kept confidential and will solely be used for academic purposes.*

Aside from the instructions found in the instrument, interviewers should also take note of the following:

Q#	Instructions
11	Indicate the number of hours in the format <b>hh:mm</b> .

23a-30c	<p>Self administered</p> <p>Guide respondent to answer each concept first before moving on to the next concept (finish <i>Intention</i> first, then continue to <i>Attitudes</i>, then finally, <i>Subjective Norms</i>).</p>
31abcde	<p>Record the names/codenames <i>verbatim</i>.</p>
31a-43e	<p>Record only the <b>number</b> that corresponds to the respondent's answer (if applicable).</p> <p>From time to time, remind the respondents that the questions <b>only refer to their network when it comes to discussing risky sexual behaviors</b>. They should not think about their general social network, i.e. they should exclude those whom which they do not discuss this topic with, even if they are close to these people.</p>

## V. DUTIES AND RESPONSIBILITIES OF INTERVIEWERS

Interviewers are expected to do the following:

1. Attend the study's data gathering orientation sessions scheduled by the coordinators.
2. Bring your student ID with you all the time. If necessary, do courtesy calls to the barangay captain before you start your interview.
3. Secure barangay permits (if necessary) through each area's barangay hall using the coordinators' request letter.
4. Follow the sampling procedures and other data gathering protocols discussed in this Manual.
5. Follow all instructions for asking questions and recording answers given in the survey instrument, as well as the other instructions given in the preceding section of this Manual. Do not change the sequence and wording of the questions, and use only the definition provided when explaining particular items to respondents.
6. Record the answers given to you by the respondent accurately.
7. Check respondents' answers for accuracy and consistency with their previous responses. If necessary, probe the answers to clarify vague/inconsistent responses.
8. Ensure that all questions applicable to a respondent have been asked of her/him. If possible, go back to the respondent if requested to do so by the area coordinator.
9. Completely cover areas of assignment within the specified period.
10. Consult the area coordinator for any data gathering concerns.

11. Conduct all interviews ethically. Maintain the confidentiality of data and the anonymity of the respondents - i.e., do not post stories/comments and/or photos about the survey experiences and respondents in your social media accounts, do not leave questionnaires lying around in public places, and avoid discussing details about the survey with people who are not part of the project.
12. Make a brief report of the data gathering experience. See the last section of this Manual for details.
13. Submit questionnaires to the coordinators on time.

### **Interviewing Tips**

1. Be sure to create a good first impression to your respondents and the area you are visiting through proper attire and a positive demeanor. Introduce yourself properly to the household and the respondent before starting the interview.
2. Introduce yourself and build rapport with your respondent before starting the interview. Maintain your composure and professionalism when handling different situations.
3. Plan a travel route beforehand to reduce loss of time and revisits to the households.
4. Stay calm even when encountering difficult (potential) respondents.
5. Keep in mind throughout the survey interview that the subject asks the respondent to disclose personal and sensitive information. Act appropriately and accordingly.
6. Reiterate the confidentiality of data, given the sensitive nature of risky sexual behaviors and reassure the respondents that there are no right and wrong answers. As much as possible, make sure they are comfortable around you. Be honest and frank when answering questions about the study and the survey, however, only provide the necessary details.
7. Be prepared to answer their inquiries about the study or the survey itself and provide ample information.
8. Stay neutral throughout the interview. Do not react to responses that are not consistent with your own views/practices. Do not form expectations of your respondents..
9. Be patient with your respondents. Make sure to use language and communication approaches appropriate for a particular respondent. Be respectful to older respondents and persons in authority, adjust the pace of the interview to the respondent but do not rush it nor unnecessarily prolong it, etc.
10. As much as possible, interview the respondent alone. If there are other people in the room, always remind the respondent that you are interested in her/his personal responses and not on other people's comments and suggestions.
11. Always check accomplished questionnaires for completeness, reasonableness, accuracy and legibility. If any information is missing, revisit the household to get the required information.
12. While examples are to be provided and probing questions could be asked whenever the need for these arise, never suggest answers to the respondents.
13. End the interview with the impression that you are grateful to the respondents for sharing their time and experiences with you.

## **VII. THE DATA GATHERING REPORT**

As soon as the interviewers have completed their assignments, they must prepare a brief report of their data gathering experience, with the following details:

1. Areas covered for the interviews
2. Inclusive dates and time of data gathering – e.g., on 11 and 12 December, 8AM to 5PM
3. Assessment of the sampling procedure – General ease or difficulty in the implementation of the cluster sampling of households, last-birthday method of respondent selection, procedures for finding replacement households and respondents; for area coordinators, report also, if applicable, replacements of barangays and streets and reason/s for such. Reasons for ease/difficulty should be provided; these insights are useful inputs when interpreting survey results
4. Assessment of the interviews – your assessment of the respondents' engagement with the survey and the reasons for such assessment: if respondents were enthusiastic or bored, cooperative or difficult, straightforward or roundabout in giving answers, inquisitive, smart-alecky, etc.; your assessment of your own experiences as an interviewer and the reasons for such assessment
5. Challenges encountered (may overlap with, and hence could be a summing up of, your assessment of the sampling procedure and interviews) and solutions adopted; if challenges were not resolved, please provide reason/s for such
6. Any feedback from the respondents regarding the questionnaire and/or survey interview (if applicable)
7. Other insights that might contribute to a richer interpretation of the survey results and/or to better conceptualization and implementation of future risky sexual behavior studies.

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