Post-Millennial Filipinos: Renewed Hope vs Risks

Further Studies of the 2013 Young Adult Fertility and Sexuality (YAFS) Study

Comprehensive Knowledge of HIV/AIDS Among the MIMAROPA Youth

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Message from the Executive Director

Since the turn of the century over fifteen years ago, the Philippines has seen the rise of the millennial generation of young Filipinos who are currently shaping the political landscape in late 2016 as they take a committed stand on the issues of the day.

It is appropriate for those concerned with Philippine development work to now start looking at the next generation of Filipinos and the Commission on Population has had a tradition of producing studies concerning young people.

"Post-Millennial Filipinos: Renewed Hope vs Risks" compiles 17 regional papers based on the dataset of the 2013 Young Adult Fertility and Sexuality (YAFS) Study. These studies explore and discuss the emerging issues and concerns of the youth that need appropriate policy and program responses.

The latest YAFS comes more than a decade after the 2002 YAFS. The 2002 YAFS showed the concerns of the millennial Filipino much like the latest YAFS of 2013 marks the rise of the Filipinos born around the turn of the century and could foretell the shape of things to come for the 21st century young Filipino.

The post-millennial Filipino is focused on screens (smart phone, tablet and monitor) and the media is full of "hashtag-worthy" statements of 140 words.

The studies we are presenting continue to note and update matters such as sexual risk behaviors, early sexual involvement, teen pregnancy, reproductive health problems including sexually-transmitted infections as well as non-sexual risk behaviors such as smoking, alcohol abuse and drug use as well as suicide ideation and lifestyle.

We invite you to tune in to the latest findings about the post-millennial Filipino. It can only result in a more informed thread of interaction with the shapers of our country's future.

Juan Antonio A. Perez III, MD, MPH
Executive Director
Commission on Population

Background

The 2013 Young Adult Fertility and Sexuality (YAFS) Study is the fourth installment of a series of nationally representative cross-sectional surveys on Filipino youth aged 15-24 (for YAFS 1 and 2 and 15-27 for YAFS 3). The YAFS has yielded valuable information about young people's sexual and non-sexual behavior, education, labor force participation, family relationships, attitudes and values regarding certain issues concerning them, personal characteristics like self-esteem, and adverse conditions like suicidal ideation and depression symptoms, all of which are of pertinence to one's understanding of this significant sector of society. The 2013 YAFS or YAFS 4 in particular was a response to the need of updating information on the situation of today's young people. From YAFS 3 in 2002, there have been many important new developments in the environment where young people are situated that need to be studied as these affect not just their sexual and non-sexual risk taking behaviors but also their total well-being. For instance, the changes in communication and information technology such as the prevalent use of cellular phones and the internet and the new forms of communication that these have produced like social networking were not explored in the previous YAFS. The foregoing expansion in technology is presumed to have resulted to notable changes in the patterns and topographies of courtship, dating and relationships among young people. The upsurge in the incidence of HIV infection primarily among men who have sex with other men (MSMs) requires more recent reliable data on male sexual and non-sexual risk behaviors which is currently not available because regular survey rounds like the National Demographic and Health Surveys conducted every five years does not routinely include men. Moreover, with YAFS 4, core behaviors that have been monitored over time in YAFS 1, 2 and 3 were also updated. Among these are the sexual risky behaviors, such as the prevalence of early sexual involvement, teen pregnancy and reproductive health problems including sexually transmitted infections (STIs) as well as non-sexual risk behavior like smoking, drinking and drug use.

With the wealth of information yielded by the YAFS 4, the Commission on Population (POPCOM) in partnership with the Demographic Research and Development Foundation, Inc. (DRDF) came up with seventeen (17) regional papers (Regions 1-13, 4B, CAR, NCR and ARMM) that explore and discuss the emerging issues and concerns of the young people that need appropriate policy and program responses.

Comprehensive Knowledge of HIV/AIDS Among the MIMAROPA Youth

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Abstract

While the Philippines is regarded as a low-HIV-prevalence country, the number of infections in the country is increasing; about 28 percent of the new reported cases are young people aged 15–24. Studies show that more young people are engaging in premarital sex and other risky sexual practices. Studies across regions show high levels of awareness of HIV/AIDS, but comprehensive knowledge seems to be falling behind. This paper looked at the level of comprehensive knowledge of HIV/AIDS of youth from MIMAROPA and the factors associated with it, including its relationship with their sexual risk behaviors. Data were drawn from the 2013 Young Adult Fertility and Sexuality Study. The factors that were associated with comprehensive knowledge of HIV/AIDS were assessed using chi-square tests and binary logistic regression. The overall comprehensive knowledge of HIV/AIDS among MIMAROPA youth is quite low at 12.5 percent, suggesting many misconceptions on how HIV is acquired or transmitted. Age, education, poverty status, and place of residence or barangay stratum are associated with accurate and complete HIV/AIDS knowledge. Of the factors associated with comprehensive knowledge, education is the most significant, with higher levels of schooling positively associated with more accurate and complete knowledge. Media-related materials are more effective in disseminating correct and comprehensive information about sexuality. Findings also indicate that only a small proportion of the youth engage in sexual risk behaviors, and they generally have higher comprehensive knowledge of HIV/AIDS. However, information dissemination and education programs on HIV/AIDS are still crucial to raise the levels of comprehensive understanding of HIV transmission and prevention.

Keywords: comprehensive knowledge of HIV/AIDS, MIMAROPA youth, socio-demographic characteristics, risky sexual behavior

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Background and context

MIMAROPA, also known as Region IV-B, is a contraction of the names of the island provinces that constitute the region: Occidental and Oriental Mindoro, Marinduque, Romblon, and Palawan. This administrative unit was created in 2002 after Region IV (Southern Tagalog) was sub-divided. Differences in geographic characteristics, location, and proposed growth strategies prompted the move to divide the region, with the CALABARZON area (Region IV-A) focused on agro-industrialization while the role of the island provinces of MIMAROPA lay in primary industries intended to provide raw materials to the secondary industries in CALABARZON (National Economic and Development Authority [NEDA], 2011). The MIMAROPA region covers 9.15 percent of the country's total land area, with an aggregate land area of about 2.7 million hectares. Palawan is the largest province, while Marinduque is the smallest. Occidental Mindoro is the second largest, followed by Oriental Mindoro and Romblon. In terms of income classification, the island provinces range from first to fourth class: Palawan and Occidental Mindoro are first class, Oriental Mindoro is second class, Romblon has been third class since 2001, and Marinduque has been fourth class since 1995 (NEDA, 2011).

As of 2010, MIMAROPA has a total youth population (15–24 years old) of 528,813. They constitute about 3 percent of the country's total youth population of 18 million (Kabamalan & Marquez, 2014). The population of the region is relatively young, with 19.4 percent in the 15–24 age group. A look at the profile of the youth shows a very productive young population. In comparison with other regions, MIMAROPA has one of the highest proportions of youth who are studying (39.4%), working (25.5%), or both working and studying at the same time (4.4%). The region also has the lowest unemployment rate among the youth population at 4.3 percent. This high productivity profile of the young people in the region makes them an interesting sub-population to study, especially if we consider that they have the lowest prevalence of non-sexual risk behaviors such as current drinking (31%), use of prohibited drugs (1.6%), and suicide ideation (5.1%; Demographic Research and Development Foundation [DRDF] & UP Population Institute [UPPI], 2015). They also have one of the lowest teenage fertility rates in the country, with 12.3 percent of females aged 15–19 having gotten pregnant and 2.3 percent of males having gotten someone pregnant. Nevertheless, the MIMAROPA youth have a high prevalence of premarital sex at 31.3 percent. They also engage in sex at young ages, with the mean age at first sex at 17.8 years for males and 18.3 years for females. In addition, nearly one in every 50 youth in the region had sex before age 15, and more than one in five had sex before age 18. Over three fourths (77.1%) of these first premarital sexual encounters are unprotected against pregnancy and/or sexually transmitted infections (STIs; DRDF & UPPI, 2015). Early sexual initiation and a high incidence of premarital sex and unprotected sexual encounters puts them at high risk of contracting STIs and even HIV/AIDS.

While the Philippines is regarded as a low-HIV-prevalence country, the number of HIV infections in the country is increasing. This makes HIV/AIDS a major public health concern. Since the disease was first recorded in the country in 1984, the government has made various efforts to monitor the progression of the disease. In 1987, the HIV/AIDS Registry was established by the Department of Health (DOH), and in 1992, by virtue of Executive Order No. 39, the government created the Philippine National AIDS Council (PNAC), which served as the highest HIV/AIDS policymaking body in the country. In 1998, the Philippine AIDS Prevention and Control Act was passed in Congress to strengthen the country's fight against HIV/AIDS. The PNAC also developed the Philippines' AIDS Medium Term Plan 2005–2010, which served as a national road map to address the threat of HIV/AIDS (Philippine Statistics Authority [PSA], 2014).

Despite these efforts by the Philippine government, HIV cases in the country have continued to increase. The DOH reported that in February 2015, 646 new cases were reported to the HIV/AIDS and Anti-Retroviral Therapy Registry. This is 33 percent higher than the 486 reported cases in 2014. This was also the highest number of cases reported since 1984 (DOH, 2014). The PSA report on the 2013 National Demographic and Health Survey showed that new infections are focused mostly among "key populations with specific risk behaviors, such as unprotected male-to-male sex, transactional sex and intravenous drug use" (PSA, 2014). Furthermore, the report stated that infections occur at a younger age bracket, 20–29, and initiation to sex and drug use takes place on the average between 14 and 19 years old. In the 2015 report, about half (51%) of the reported cases of HIV infection belong to the 25–34 age group, while 28 percent are youth aged 15–24 years. The infection grows fastest among the youth due to their vulnerability to these risk behaviors and their generally low use of preventive services such as the use of condoms. Studies have shown that more young people are engaging in premarital sex and other risky sexual practices. Findings of the 2013 Young Adult Fertility and Sexuality Study (YAFS4) show that 32 percent of the youth have engaged in premarital sex, most of which was unprotected, with 77.9 percent of the youth engaging in unprotected first premarital sex and 75.9 percent engaging in their last premarital sex unprotected (Marquez, 2014). They also engage in other sexual activities, which, if unprotected, could pose a high risk for unplanned pregnancy and STIs including HIV. These are commercial sex (paying for sex and being paid in exchange for sex), casual sex, having a non-romantic regular sexual relationship, and extramarital sex (DRDF & UPPI, 2014). While the prevalence of these sexual activities is low, such sexual encounters are mostly spontaneous and unprotected; this makes the youth particularly vulnerable to HIV/AIDS infection. Of the youth who have ever paid for sex, only 27.3 percent reported use of a condom every time they paid for sex in the past 12 months before the survey. Among those with casual sex experience, only 18 percent used a condom the last time they had casual sex (DRDF & UPPI, 2014).

While young people account for a large proportion of new HIV infections, many of them lack accurate and complete information on how the virus is transmitted and how exposure can be avoided. This was validated by the Joint United Nations Programme on HIV/AIDS (UNAIDS) Report in 2008, which claimed that young people aged 15–24 account for 45 percent of all new HIV infections in adults. Studies across regions show high levels of awareness of HIV/AIDS, but comprehensive knowledge seems to be falling behind. Comprehensive knowledge about HIV and how to avoid transmission is gauged by young people's ability to correctly identify the two major ways of preventing sexual HIV transmission (using condoms and limiting sex to one faithful, uninfected partner), their rejection of major misconceptions about HIV transmission (that HIV is transmitted through mosquito bites and that a person can get HIV by sharing a meal with someone who is infected), and knowing that a healthy-looking person can have HIV (UNAIDS, 2010).

Review of related literature

Risky sexual behavior and HIV/AIDS

Risky sexual behaviors encompass a variety of behaviors including early sex, having multiple sexual partners, commercial sex, casual sex, having a non-romantic regular sexual relationship ("fuck buddy" or FUBU), and extramarital sex. Engaging in these sexual activities unprotected (without condom use) could pose high risks for unplanned pregnancy and STIs including HIV.

The overwhelming majority of new HIV infections are transmitted through sex; thus, early initiation to sex poses potential risks for HIV infection among young people. Early sexual debut can also lead to unintended pregnancy, abortion, and other sexually transmitted diseases (STDs). A study that looked at the association between the timing of initiation of sexual activity and sexual risky behaviors among students in China showed that young people who initiated sexual activity early engaged in more risky behaviors, which could lead to higher risks of unwanted pregnancies, contracting STDs, and HIV infection (Ma et al., 2009). A similar study in Malawi claimed that just like in other sub-Saharan countries, early sexual debut is associated with a higher risk of STIs and HIV (Misiri, 2014). This was also noted by Marquez (2008) in her study of sexual initiation among the Filipino youth. Early transition to sexual activity increases the exposure of young people to risks of STDs including HIV infection.

Another important determinant of HIV infection among young people is having unprotected sex with a person who is infected. Condom use is recognized as one of the more efficient methods to reduce sexual transmission of HIV. A study by Weller and Davis-Beaty (2002) estimating the effectiveness of condoms in reducing heterosexual transmission of HIV showed that an approximately 80 percent reduction in HIV incidence may result from consistent

condom use. In the Philippines, however, a study showed that young people viewed condoms primarily as a means for preventing pregnancy (Lucea, Hindin, Gultiano, Kub, & Rose, 2012). While this may lead to an increase in condom use for such purpose, this may also limit condom use for disease prevention when young people are using another form of birth control, thus placing themselves at a high risk for STIs and HIV infection. This also manifests the low perception of risk for HIV and other STDs even among the general population (Raymundo & Cruz, 2004).

The perception that condoms provide substantial protection against HIV protection, however, does not guarantee consistent condom use. Varied factors have been identified to explain the non-use of condoms by young people. Some reasons include affordability and difficulty of access. For some young people, buying condoms is not within their means and requires spending money that could be used on other basic needs. A study by Manalastas (2009) on Filipino men's efficacy beliefs about personally obtaining condoms also pointed out that embarrassment may play an important role in enabling or constraining condom use behavior. Moore et al. (2006) noted that purchasing condoms can be embarrassing, since this involves a social audience and public behavior. Buying condoms may suggest that one is planning or expecting to have sex. In a society that considers sexual interaction as something personal that is best kept to oneself and one's partner, publicly buying condoms may bring about emotional discomfort and anxiety (Manalastas, 2009).

Citing various sources, Manalastas also attributed low levels of condom use to sociological and structural factors such as restricted condom supply, sexual cultural norms that stigmatize condom use in general, the influential Roman Catholic Church's anti-condom stance, the lack of comprehensive sexuality education in schools, and dominant sexual ideologies that lay down particular sexual contexts for condom use, such as during casual sex but not in committed relationships. Guiella and Madise (2007) cited other factors such as the difficulty of negotiating the use of condom, since some see it as a sign of mistrust in a sexual relationship, or the inability of young girls to negotiate. In Uganda, a study using the 2004 National Survey of Adolescents indicated that correct knowledge of the use of condom and positive attitudes toward condom use are also associated with the likelihood that young people will use condoms (Kayiki & Forste, 2011).

The idea of increased knowledge resulting in safe sexual behavior aimed at reducing HIV infection and modifying or avoiding risky sexual behavior is at the core of most HIV/AIDS education campaigns. However, studies on the impact of knowledge on HIV on sexual behavior have been inconsistent, generating varied results. While some studies have shown positive changes in sexual behavior associated with increased knowledge on HIV/AIDS, other studies have shown that people still practice unsafe sex despite having knowledge of HIV/AIDS.

The UNAIDS Global Report in 2010 acknowledged an increase in the knowledge of the epidemic and how to prevent HIV infection among young people aged 15–24 years, the population group recognized as frequently at the highest risk for infection. It reported a study in Namibia in 2009 that showed improvements across key knowledge and behavior and declines in HIV prevalence among young people aged 15–24 years from more than 10 percent in 2007 to about 5 percent in 2009 (UNAIDS, 2010). However, a UNAIDS-commissioned literature review reported mixed results with regard to the effects of HIV/AIDS and sexual health education on young people's sexual behavior. The review noted that of the 68 reports that were evaluated, 27 showed neither increased nor decreased sexual activity and attendant rates of pregnancy and STDs, while 22 pointed to the delayed onset of sexual activity, reduced number of sexual partners, or reduced unplanned pregnancy and STD rates. Likewise, a review by the United Nations Education, Scientific, and Cultural Organization (2009) of 87 sex education studies yielded diverse results. A number of these interventions reported positive outcomes such as a delay in sexual initiation, a decrease in the number of sexual partners, an increase in condom use, and lower sexual risk taking. But not all interventions resulted in decreased risk of HIV infection.

Still other studies in diverse cultural settings yielded varied results. Basic knowledge or awareness of HIV/AIDS does not seem to translate to modification of sexual behavior to favor safe sexual practices, as viewed by some researchers. Studies have shown a poor correlation between knowledge and sexual behavior, claiming that knowledge of HIV/AIDS seemed to be insufficient to deter people from practicing unsafe sex (Awoniyi, 2015; Mudingayi, Lutala, & Mupenda, 2011). These studies have shown that high levels of awareness of HIV/AIDS exist among the youth population in their countries, yet their respondents acknowledged that they often had unsafe sex with high-risk partners. Odu and Akanle (2008) revealed that the youth have very high knowledge of key basic concepts on HIV/AIDS, but they also have many misconceptions about AIDS and its cure. In Nigeria, students from the secondary level to college were found to be very much aware that sexual intercourse is the most prevalent mode of HIV/AIDS transmission in the country. Yet for a variety of reasons, many of these young people continue to engage in unsafe sexual behaviors that put them at risk of HIV/AIDS infection. In the Philippines, while young people showed high levels of awareness of HIV/AIDS as evidenced from the findings of the 2002 YAFS (Zablan, Marquez, & Laguna, 2004), they also showed a high prevalence of misconceptions such as the belief that HIV/AIDS is curable. The findings also highlighted the false view of the youth population that they are immune from AIDS and that the disease is not a threat.

Comprehensive knowledge of HIV/AIDS and sexual behavior

The studies above highlight that basic knowledge or mere awareness of HIV/AIDS does not guarantee that young people will adopt behaviors that will protect them against infection. In relation to HIV/AIDS, nothing less than complete and correct knowledge is necessary for

effective prevention. Comprehensive knowledge of HIV/AIDS is defined as (1) knowing that both condom use and limiting sex partners to one uninfected partner are HIV prevention methods, (2) being aware that a healthy-looking person can have HIV, and (3) rejecting the two most common local misconceptions that HIV/AIDS can be transmitted through mosquito bites and by sharing food (United Nations Children's Emergency Fund [UNICEF], n.d.).

A review of studies that included comprehensive sex and HIV education programs in developing and developed countries showed that two thirds of these studies revealed that young people who underwent sex education were significantly more likely to have better knowledge and to engage in protective behaviors than those who did not receive the intervention (Kirby, 2011). Kirby pointed out that comprehensive sex education programs can encourage safe sex behaviors such as delaying the onset of sexual activity, reducing the frequency of intercourse and unprotected sex, reducing the number of sexual partners, and increasing condom and contraceptive use. Another study noted that teens with more accurate knowledge of HIV transmission and prevention are likely to have a better understanding of risk factors and feel more capable of reducing risks for contracting HIV (Swenson et al., 2010). Although knowledge might not be enough to protect the young people, having complete and accurate information about HIV may affect them by promoting attitudes necessary to engage in health-care-seeking behavior.

However, a number of studies in diverse cultural settings have shown that comprehensive knowledge on HIV/AIDS often lags behind the rapid shifts in sexual attitudes and behavior (Jha et al., 2015; Ochako, Ulwodi, Njagi, Kimetu, & Onyango, 2011; Oljira, Berhane, & Worku, 2013; Rejoice, 2013). Some of the factors identified as contributing to low levels of comprehensive HIV/AIDS knowledge are low perception of the risks of HIV/AIDS, which serves as a barrier to changes in sexual behavior; prevalence of misconceptions about HIV transmission; and harboring a positive attitude toward HIV/AIDS (Jeckoniah, 2013).

In the Philippines, the series of YAFS surveys assessed the level of awareness of young people on issues related to STIs and HIV/AIDS. Results of YAFS2 revealed an almost universal awareness of AIDS among the youth; 95.1 percent of those ages 15–24 had heard of AIDS in 2002 (Zablan et al., 2004). But the survey data showed a sizeable proportion of young people with misconceptions about HIV/AIDS. Close to three in ten (27.8%) young people believed that AIDS is curable. More alarming is the fact that these numbers increased from the 1994 level of 12.5 percent. This is further compounded by the fact that 73.4 percent of the young people in 2002 thought they had no chance of getting AIDS in the future, which is similar to the 1994 level (Zablan et al., 2004). This seeming lack of progress in the accumulation of knowledge regarding HIV/AIDS also raises doubts on the efficacy of educational programs on HIV/AIDS.

The present study

It is in this light that this study on comprehensive knowledge of HIV/AIDS among the MIMAROPA youth was undertaken. While the current HIV prevalence is low in the Philippines and in this region, societal risk factors are growing rapidly. Amid these changing conditions, it is imperative to better understand the circumstances by which HIV/AIDS infection may be prevented. This paper looks at the level of comprehensive knowledge of HIV/AIDS of youth from MIMAROPA and the factors associated with it. While many studies dwell on comprehensive knowledge across different regions, few of these studies deal with the level of knowledge of HIV/AIDS indicators separately. This study will look into the level of knowledge of HIV/AIDS indicators separately aside from evaluating the aggregate comprehensive knowledge indicator. The paper will also explain the relationship between comprehensive knowledge of HIV/AIDS among the youth in the region and their sexual risk behaviors.

Specifically, this paper aims to address the following research questions:

1. What is the level of knowledge of HIV/AIDS across socio-economic and demographic groups?
2. Is there a relationship between sources of information on sex and knowledge of HIV/AIDS?
3. What is the effect of socio-economic and demographic factors and sources of information on sex on the level of HIV/AIDS knowledge?
4. What is the relationship between knowledge of HIV/AIDS and sexual risk behaviors?

It is hoped that understanding the sexual behaviors and attendant risks of HIV/AIDS infection among the MIMAROPA youth will provide a basis for possible policy interventions focusing on reproductive health.

Objectives

This study aims to examine the differentials in the knowledge of HIV/AIDS of the youth from MIMAROPA.

The specific objectives of the study are as follows:

1. To assess the extent of knowledge regarding HIV/AIDS across socio-economic and demographic groups
2. To assess the level of knowledge on HIV/AIDS when young people are grouped according to their sources of information on sex
3. To determine the effect of socio-economic and demographic factors and sources of information on sex on knowledge of HIV/AIDS

4. To determine the relationship between knowledge on HIV/AIDS and sexual risk behaviors

Data and methods

To address the research questions above, data were drawn from the YAFS4 for MIMAROPA. YAFS4 is the fourth in a series of national surveys on the Filipino youth conducted since 1982 by UPPI and DRDF. The YAFS serves as one of the primary sources of information on sexual and non-sexual risk behaviors and their determinants in the Philippines at the national and regional levels. It gathered data from Filipino youth ages 15–24 years and covered a wide range of topics relevant to the age group, including education trajectories, labor force participation, relationships and roles in society, values and attitudes, and risk behaviors. The wide variety of transformations confronting the Filipino youth today, such as rapid technological change, the changing landscape of Philippine labor, emergent issues in reproductive health (particularly the increasing prevalence of HIV infection), premarital sex, teenage pregnancy, and STIs, prompted the collection of new data on young people through YAFS4. YAFS4 data may be used in health planning and may provide evidence for future reproductive health programs for young people by government and non-government organizations in the region.

The sample interviewed in MIMAROPA is composed of 1,084 young people from 70 barangays within the 36 municipalities and cities in the five island provinces that constitute the region. A minimum of 15 respondents (single and married males and females aged 15–24 years) from 15 randomly selected households were interviewed in each sample barangay. Face-to-face interviews were conducted to derive responses from the young people.

Variables and measurements

To assess for correct and comprehensive knowledge of HIV/AIDS, correct responses on the following statements were considered:

1. The risk of HIV transmission can be reduced by having sex with only one uninfected partner who has no other sexual partners.
2. A person can get HIV from mosquito bites.
3. A person can reduce the risk of getting infected with HIV by using a condom every time they have sex.
4. A healthy-looking person can have HIV.
5. A person can get HIV by sharing food with someone who is infected.

In the processing of HIV knowledge, those with "do not know" and "not applicable" (have not heard of AIDS) responses were categorized as having incorrect information, while those with no information were excluded from the analysis (set as missing cases).

The following background characteristics were used for bivariate analysis:

a. Sex (male, female)
b. Age group (15–19, 20–24)
c. Education (no schooling/preschool/elementary, high school undergraduate, high school graduate/vocational, college+)
d. Type of residence (urban, rural)
e. Poverty status (poor, non-poor)

Sources of information about sex were gathered from the questions "If you have questions about sex, whom will you likely consult?" and "What are your sources of information about sex?" The responses were categorized as "none" if the respondent said none to both questions, "persons only" if the respondent had an answer to the first question and said "none" to the second, "materials only" if the respondent said "none" to the first question and had an answer to the second question, and "both persons and materials" if the respondent had an answer to both questions. The categories for both questions were not read out to the respondents. Persons likely consulted regarding sex include the father, mother, brother, sister, other relatives, spouse/partner, friends, doctor/nurse/midwife, teacher/professor, counselor, and health center staff. Material sources of information on sex include books, magazines, newspapers, comics, TV, radio, family planning materials, school charts/films, and the Internet.

The sexual risk factors included in the analysis are engaging in casual sex and having a FUBU (i.e., fuck buddy or friends with benefits). Casual sex is a non-romantic sexual relationship with someone one does not know (a stranger), which happened once or twice, while FUBU is a regular non-romantic sexual relationship with a friend. Non-use of contraception and preventive services such as condom during casual sex and FUBU encounters were also included in the analysis.

Data analysis was done using SPSS version 23. Chi-square tests were utilized to determine the association of the dependent variable with background characteristics such as sex, age group, education, type of residence, wealth index, and poverty status. All p-values less than .05 were considered statistically significant.

Binary logistic regression was conducted to determine the factors that would explain each of the responses of the MIMAROPA youth to the five statements on HIV/AIDS and one aggregate measure representing their comprehensive knowledge on HIV/AIDS. Hence, six models were generated for this analysis.

Conceptual framework

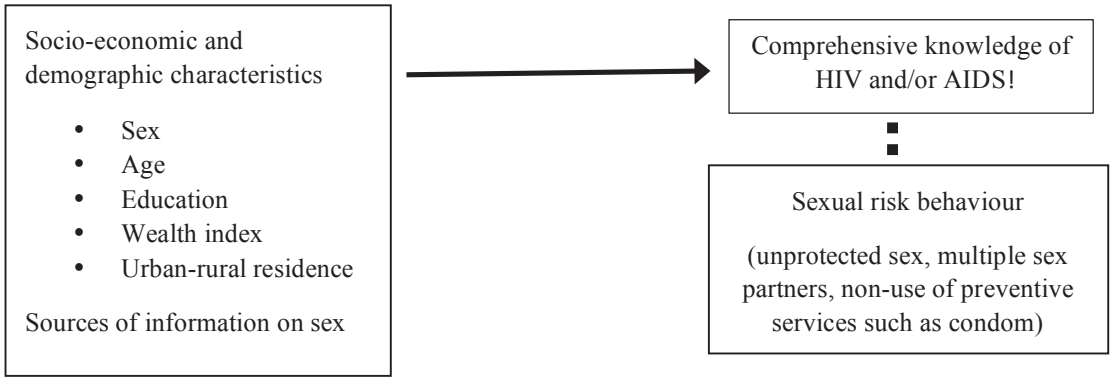

Figure 1. Conceptual framework of the study

Results

As shown in the profile of the MIMAROPA youth in Table 1, there is an almost equal proportion of males (50.1%) and females (49.9%). More than half (58.5%) of the young people are teenagers. Close to seven in every ten respondents (68.3%) are high school graduates and undergraduates, and a great majority (86.5%) are living in rural areas. Youth from MIMAROPA mostly come from households that are non-poor (73.0%). The respondents' information on sex primarily comes from both material and person sources (61.1%).

Table 1. Characteristics of MIMAROPA youth

Background characteristics	Frequency	Percent
Sex		
Male	543	50.1
Female	541	49.9
Age group		
15–19	634	58.5
20–24	450	41.5
Highest educational attainment		
No schooling/pre-school/elementary	155	14.3
High school undergraduate	443	40.9
High school grad/vocational	297	27.4
College+	189	17.4
Type of residence		
Urban	146	13.5
Rural	938	86.5
Poverty status		
Poor	293	27.0
Non-poor	791	73.0
Sources of information on sex		
None	143	13.2
Materials	37	3.4
Persons only	241	22.3
Both material and person sources	660	61.1

Comprehensive knowledge of HIV/AIDS is measured by correctly identifying the two ways of preventing sexual transmission of HIV (Statements 1 and 3), rejecting the two most common misconceptions about HIV transmission (Statements 2 and 5), and knowing that a healthy-looking person can have HIV/AIDS (Statement 4). Table 2 shows that 73 percent of the young people understand that the risk of HIV transmission can be reduced by having sex with only one uninfected partner who has no other sexual partners, and slightly more than half (57.5%) understand that using condoms during sexual intercourse reduces the risk of acquiring HIV. However, 33.1 percent of the respondents have the misconception that a person can get HIV from mosquito bites, and 60.7 percent agree that a person can get HIV by sharing food with someone who is infected. Half (50.3%) of the MIMAROPA youth believe that a healthy-looking person is not likely to have HIV. Taken together, a low percentage of MIMAROPA youth have comprehensive knowledge of HIV, with only 12.5 percent of them answering the five questions correctly.

Table 2. Correct and comprehensive knowledge of HIV transmission and prevention

Statements on HIV/comprehensive knowledge on HIV	Correct knowledge of HIV		N of cases
	Correct	Incorrect	
The risk of HIV transmission can be reduced by having sex with only one uninfected partner who has no other sexual partners.	73.0	27.0	1,084
A person can get HIV from mosquito bites.	66.9	33.1	1,084
A person can reduce the risk of getting infected with HIV by using a condom every time they have sex.	57.5	42.5	1,082
A healthy-looking person can have HIV.	49.7	50.3	1,083
A person can get HIV by sharing food with someone who is infected.	39.3	60.7	1,083
Comprehensive knowledge of HIV	12.5	87.5	1,082

Table 3 shows how the respondents' answers to the statements about HIV/AIDS are related to their characteristics. The sex of a respondent has a significant effect on the statement that a person can reduce the risk of getting infected with HIV by using a condom every time they have sex, with males showing a higher score. Generally, the older age group (20–24) has a higher proportion with the correct HIV knowledge, but the disparity across age groups is significant in their responses to the following statements: the risk of getting HIV is reduced by having sex with only one uninfected partner who has no other sexual partner, a person can reduce the risk of getting infected with HIV by using a condom every time they have sex, and a healthy-looking person can have HIV. There is a positive relationship between education and correct knowledge of the five HIV statements and HIV comprehensive knowledge; as educational attainment increases, the proportion with correct and comprehensive HIV knowledge also increases. The type of residence significantly affects their belief that condom use can prevent transmission of HIV/AIDS; more urban residents have correct knowledge on this. The household poverty status of respondents has significant effects on their beliefs on all statements except the statement that a person can get HIV by sharing food with someone who is infected. The poor group is more likely to agree with the statements and has a higher proportion with comprehensive HIV knowledge.

Table 4 shows the correct and comprehensive knowledge of HIV transmission and prevention across sources of information on sex. More MIMAROPA youth who get their sexual information mainly from material sources gave correct answers on statements about HIV. The same finding is true for comprehensive HIV knowledge; a higher proportion of young people who reported material sources only as their source of sexual information have comprehensive HIV knowledge (24.3%) compared with those who said that their sources of sexual information are persons only (5.4%).

These results were further examined in a logistic regression model separately for each item and for the comprehensive knowledge indicator, for a total of six models; the results are shown in Table 5. The values of Nagelkerke R^2 determine how much the background characteristics of young people in MIMAROPA explain the variation of outcomes in the logistic regression model. This explains how much the various characteristics of the youth explain their responses to each of the HIV statements (Models 1 to 5) and having comprehensive HIV knowledge (Model 6). Model 1 explains the correct knowledge of the statement that the risk of HIV transmission can be reduced by having sex with only one uninfected partner. The younger age group (15–19 years old) is less likely to have correct knowledge on this HIV statement compared with their older counterparts (20–24 years old). Young people with at least a high school education are about two to four times more likely to have correct knowledge on HIV Statement 1 than those with no schooling or those who have reached pre-school or elementary. Poor youth are also less likely to agree that the risk of HIV transmission can be reduced by having sex with only one uninfected partner. Young people whose sources of information about sex are mainly materials and both materials and persons are three and two times more likely to have correct knowledge of HIV Statement 1, respectively, compared with those who said they do not have any source of sexual information.

Table 3. Correct and comprehensive knowledge of HIV transmission and prevention across background characteristics

Background characteristics	Statements on HIV					Comprehensive knowledge on HIV
	The risk of HIV transmission can be reduced by having sex with only one uninfected partner who has no other sexual partners	A person can get HIV from mosquito bites	A person can reduce the risk of getting infected with HIV by using a condom every time they have sex	A healthy-looking person can have HIV	A person can get HIV by sharing food with someone who is infected	
Sex			***			
Male	72.7	64.5	64.0	49.4	39.3	13.9
Female	73.2	69.3	51.0	49.9	39.4	11.1
Age group	**		***	**		
15–19	69.4	65.3	51.0	46.2	37.7	10.9
20–24	78.0	69.1	66.6	54.6	41.6	14.7
Highest level of schooling	***	***	***	***	***	**
Elementary graduate or lower	53.5	45.2	42.9	28.4	25.2	6.5
HS undergraduate	68.4	64.8	51.5	46.3	38.4	11.1
HS graduate/ vocational	82.8	73.7	68.7	59.9	42.4	14.5
College+	84.1	78.8	66.0	59.0	48.4	17.6

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3. Correct and comprehensive knowledge of HIV transmission and prevention across background characteristics (con't)

Background characteristics	Statements on HIV					
	The risk of HIV transmission can be reduced by having sex with only one uninfected partner who has no other sexual partners	A person can get HIV from mosquito bites	A person can reduce the risk of getting infected with HIV by using a condom every time they have sex	A healthy-looking person can have HIV	A person can get HIV by sharing food with someone who is infected	Comprehensive knowledge on HIV
			*			
Barangay stratum						
Urban	79.5	72.6	66.9	52.4	42.1	16.6
Rural	72.0	66.0	56.0	49.3	38.9	11.8
Poverty status	***	***	***	*		
Poor	76.6	70.7	60.8	51.5	40.4	13.3
Non-poor	63.1	56.7	48.6	44.7	36.5	10.3

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4. Correct and comprehensive knowledge of HIV transmission and prevention across sources of information on sex

Sources information on sex	Statements on HIV					Comprehensive knowledge on HIV
	The risk of HIV transmission can be reduced by having sex with only one uninfected partner who has no other sexual partners	**A person can get HIV from mosquito bites**	**A person can reduce the risk of getting infected with HIV by using a condom every time they have sex**	**A healthy-looking person can have HIV**	**A person can get HIV by sharing food with someone who is infected**	
	***	**	***	*	ns	***
None	57.3	56.6	51.4	46.9	41.3	14.1
Materials	83.8	78.4	73.0	64.9	51.4	24.3
Persons only	66.8	63.5	44.4	43.6	35.7	5.4
Both material & person sources	78.0	69.7	62.7	51.4	39.5	14.0

Note. ns = not significant.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Model 2, which states that a person can get HIV from mosquito bites, can be significantly explained by education and poverty status. The MIMAROPA youth with at least a high school education are about two to three times more likely to have correct knowledge on HIV Statement 2 than those with no schooling or those who have reached just pre-school or elementary. Poor youth are less likely to disagree that a person can get HIV from mosquito bites.

Model 3 states that a person can reduce the risk of getting infected with HIV by using a condom every time they have sex. While males are two times more likely to agree with Statement 3 compared with females, young people aged 15–19 are less likely to agree with this statement. Similar to Models 1 and 2, young people with at least a high school education are more likely to agree that a person can reduce the risk of getting infected with HIV by using a condom every time they have sex. Urban residents are 1.6 times more likely to agree with Statement 3 compared with rural residents.

Model 4, which states that a healthy-looking person can have HIV, is affected by age and education. Young people belonging to the 15–19 age group are less likely to agree with this statement, while those with at least a high school education are more likely to agree that a healthy-looking person can have HIV.

Model 5, which explains agreement with the statement that a person can get HIV by sharing food with someone who is infected, is explained by educational attainment. Young people with at least a high school education are about two to three times more likely to disagree that a person can get HIV by sharing food with someone who is infected compared with those with no schooling or those who have reached pre-school or elementary.

As for having comprehensive knowledge of HIV (Model 6), young people who are high school graduates and college graduates are 2.3 times and 2.9 times more likely to have comprehensive HIV knowledge, respectively, compared with those with elementary or lower education. Interestingly, young people who reported that their sources of information on sex are persons only are less likely to have comprehensive HIV knowledge compared with those who do not have any source of sexual information.

Table 5. Logistic regression model of the correct and comprehensive knowledge of HIV of young people in MIMAROPA across factors

Factors	Odds ratio					
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
A. Socio-demographic factors						
Sex						
Male	1.188	0.945	2.022***	1.142	1.091	1.371
Female (reference)						
Age group						
15–19	0.687*	0.876	0.518***	0.748*	0.854	0.707
20–24 (reference)						
Highest level of schooling						
Elementary graduate or lower (reference)						
HS undergraduate	1.904***	2.064***	1.817***	2.408***	2.006***	2.061
HS graduate/vocational	3.583***	2.908***	2.997***	3.662***	2.232***	2.330*
College+	3.457***	3.492***	2.510***	3.567***	2.902***	2.912**
Type of residence						
Urban	1.342	1.263	1.568*	1.139	1.153	1.427
Rural (reference)						
Poverty status						
Poor	0.714*	0.706*	0.757	0.978	1.018	0.954
Non-poor (reference)						
Sources of information on sex						
None (reference)						
Materials	2.999*	2.088	2.215	1.663	1.234	1.617
Persons only	1.466	1.226	0.789	0.842	0.757	0.343**
Both material & person sources	2.072***	1.340	1.364	0.986	0.794	0.836
Nagelkerke R^2	0.118	0.080	0.137	0.071	0.033	0.061

Note. Model 1: The risk of HIV transmission can be reduced by having sex with only one uninfected partner who has no other sexual partners. Model 2: A person can get HIV from mosquito bites. Model 3: A person can reduce the risk of getting infected with HIV by using a condom every time they have sex. Model 4: A healthy-looking person can have HIV. Model 5: A person can get HIV by sharing food with someone who is infected. Model 6: Comprehensive knowledge on HIV.
* $p < .05$. ** $p < .01$. *** $p < .001$.

How the results above translate to behavior is shown in Table 6, where the sexual risk behavior of young people in MIMAROPA is cross-classified with their knowledge of HIV transmission and prevention. The results show that more young with comprehensive knowledge have engaged in casual sex compared with those without comprehensive

knowledge. Generally, the MIMAROPA youth, regardless of their comprehensive HIV knowledge, have a low level of engagement in any sexual risk behavior. However, it is worth noting that the small proportion who engage in risky sexual behaviors do not protect themselves from STIs and/or HIV.

Table 6. Sexual risk behaviors engaged in by young people in MIMAROPA across comprehensive knowledge of HIV

Sexual risk behaviors	Comprehensive knowledge of HIV	
	With	Without
Have a regular sexual partner with whom one is not in a romantic relationship (FUBU)		
Yes	4.4	2.5
No	95.6	97.5
N of cases	135	945
Use of contraception or protection from STIs when they have sex with a FUBU (among those who have a FUBU)		
Every time	(0.0)	(4.2)
Most of the time	(16.7)	(0.0)
Sometimes	(33.3)	(16.7)
Never	(50.0)	(79.2)
N of cases	6	24
Have engaged in casual sex**		
Yes	9.6	4.0
No	90.4	96.0
N of cases	135	945
Use of contraception or protection from STIs when they have casual sex (among those who have engaged in casual sex)		
Every time	(7.7)	21.1
Most of the time	(7.7)	7.9
Sometimes	(7.7)	10.5
Never	(76.9)	60.5
N of cases	13	38

Note. Figures in parentheses are based on fewer than 30 cases.
** $p < .01$.

Discussion

The paper assessed the extent of knowledge of MIMAROPA youth regarding HIV/AIDS. Overall comprehensive knowledge of HIV/AIDS is quite low at 12.5 percent, suggesting many misconceptions on how HIV is acquired or transmitted. The paper also examined the extent to which the background characteristics of young people in MIMAROPA explained the variation in comprehensive knowledge of HIV/AIDS. Based on the results, the sex of the youth is a significant predictor only with regard to consistent condom use, something that reflects the fact that men are the ones using condoms. The type of residence is also only significant for this model, which could be attributed to the higher accessibility of condoms in urban than in rural areas.

Age is interestingly only significant with regard to correct knowledge on the statements about having just one partner, consistent condom use, and whether a healthy-looking person can have HIV. The older group of young adults has better knowledge of HIV/AIDS than the younger group. Education may have an interaction effect between age and comprehensive knowledge on HIV/AIDS. This is also consistent with the findings of both the 1994 and 2002 YAFS, where the older group of young adults registered higher awareness of AIDS compared with the 15–19 age group (Zablan et al., 2004).

Of all the background characteristics, only education is consistently a significant predictor of all five statements and of comprehensive knowledge. Most misconceptions on HIV/AIDS are often due to a lack of education. Being educated allows one to be well informed about many aspects in life, to be able to discern facts from myths, and to have the ability to make appropriate choices or decisions based on logical and well-planned actions. While YAFS2 and YAFS3 did not measure comprehensive knowledge among youth respondents but awareness of STDs and HIV/AIDS (Raymundo & Cruz, 2004), trends show that higher levels of schooling benefit the youth's awareness of STDs and HIV/AIDS. This finding is also consistent with the findings of YAFS4. Respondents who completed only lower levels of education (elementary graduate or lower) are less likely to have accurate and complete knowledge of HIV, while those with higher levels of education (college and high school graduates) exhibit higher levels of comprehensive knowledge. This indicates increased exposure to correct and complete HIV/AIDS information with higher levels of education and reduced susceptibility of young people to myths and misconceptions.

The study also determines the degree of association of comprehensive knowledge of HIV/AIDS with sources of information and sexual risk behaviors. Correct and comprehensive knowledge of HIV/AIDS is also associated with different sources of information. Respondents who cited materials as their information sources for HIV/AIDS are more likely to have comprehensive knowledge compared with those who referred to persons only as their sources of information or those who had no sources of information at all. Materials such as magazines, newspapers, pamphlets, and other media-related materials may be more effective in disseminating correct and comprehensive information

compared with talking/discussing with persons who can be possible sources of incorrect information or even misconceptions. Media-related materials may also tackle sexually related issues more openly and in a manner that may attract more attention from young people (Oljira et al., 2013); hence, these may be more effective sources of information regarding sexuality. In a study on pornography and sexual initiation, it was pointed out that young people are mostly likely to tap peers and mass media as sources of sexuality information, especially in a society where talking about sex is considered taboo (Laguna, 2008).

As for sexual risk behaviors, study findings indicate that only a small proportion of MIMAROPA youth engage in sexual risk behaviors, and those who have engaged in risky sex have higher comprehensive knowledge of HIV/AIDS. While this is generally comforting to know, this does not preclude the fact that those who engaged in casual sex did not practice safe sex. Specific groups, although small in number, are vulnerable to HIV infection. There is always the danger that they are capable of spreading the disease on a larger scale.

Conclusion and recommendations

This paper sought to determine the level of knowledge of HIV/AIDS among the MIMAROPA youth. Findings show that only a small proportion of the young population have comprehensive HIV/AIDS knowledge. Of the factors associated with comprehensive knowledge, education was the most significant, with higher levels of schooling positively associated with more accurate and complete knowledge. Thus, information dissemination and education programs on HIV/AIDS are crucial not only to maintain the high levels of awareness of HIV/AIDS among the MIMAROPA youth but also to raise the levels of comprehensive understanding of HIV transmission and prevention. Efforts to educate the young people of MIMAROPA should particularly target those who are misinformed and those who have misconceptions about HIV. The education programs must be tailored to meet the particular needs of different groups of young people, such as particular age groups, those in different geographical locations, and those belonging to different ethnic groups. There should also be programs that reach out to the out-of-school youth, since they are likely to get the wrong information about HIV/AIDS. These programs should not just depend on the content of the messages but also incorporate ways that will motivate the young people to change their behavior toward safe, protected sex.

In consonance with the results of the study, the Commission on Population (POPCOM) Region IV recommends a vigorous campaign to educate the youth of the region, which will include the training of information officers to be communicators of adolescent sexual and reproductive health (ASRH) issues, and the harmonization of all Adolescent Health and Youth Development (AHYD)-related activities in a campaign against teenage pregnancy, STIs, HIV, and AIDS. To address the problem of limited

sources of information about sex, POPCOM recommends the tapping of possible donor agencies (e.g., UNFPA, USAID, UNICEF) to provide support for AHYD-related activities and capacitating youth leaders in the various barangays, municipalities, and cities in the region to serve as peer educators and champions of ASRH issues. To address the prevalence of many misconceptions among young people about HIV transmission, POPCOM also intends to work closely with the media for media mileage on AHYD activities. Since young people in the region consider media-related materials more engaging and helpful, campaign materials in various forms of media such as films and radio programs are encouraged. Issues and concerns on ASRH will also be addressed using evidence-based data from local research.

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References

Awoniyi, M. (2015). A study of Nigerian youths' understanding, perception of HIV/AIDS phenomenon and sex attitudes: The link between acceptance of reality and marketing motives of multinational pharmaceutical companies. *Journal of Service Science and Management*, *8*(4), 471–484. http://dx.doi.org/10.4236/jssm.2015.84048

Demographic Research and Development Foundation & University of the Philippines Population Institute. (2014). *2013 YAFS4 key findings*. Quezon City: Demographic Research and Development Foundation and University of the Philippines Population Institute.

Demographic Research and Development Foundation & University of the Philippines Population Institute. (2015). *YAFS Region IV-B profile*. Quezon City: Demographic Research and Development Foundation and University of the Philippines Population Institute.

Department of Health. (2014). *Philippine HIV/AIDS Registry*. Retrieved from http://www.doh.gov.ph/sites/default/files/statistics/NEC HIV Dec-IDSreg2014.pdf

Guiella, G., & Madise, N. (2007). HIV/AIDS and sexual-risk behaviors among adolescents: Factors influencing the use of condoms in Burkina Faso. *African Journal of Reproductive Health, 11*(3), 182. http://dx.doi.org/10.2307/25549739

Jeckoniah, J. (2013). Knowledge and perceived risk of HIV/AIDS among Tanzanian university students. *Kivukoni Journal, 1*(2), 121–138. Retrieved from http://www.mnma.ac.tz/ch8.pdf

Jha, P., Narayan, P., Nair, S., Ganju, D., Sahu, D., & Pandey, A. (2015). An assessment of comprehensive knowledge of HIV/AIDS among slum and non-slum populations in Delhi, India. *Open Journal of Preventive Medicine, 5*, 259–268. Retrieved from http://www.scirp.org/journal/ojpmhttp://dx.doi.org/10.4236/ojpm.2015.56029

Kabamalan, M., & Marquez, M. (2014). *MIMAROPA youth today: Risk behavior of young people in MIMAROPA*. Paper presented at the YAFS4 Regional Dissemination Forum, Circon Hotel, Puerto Princesa, Palawan.

Kayiki, S., & Forste, R. (2011). HIV/AIDS-related knowledge and perceived risk associated with condom use among adolescents in Uganda. *African Journal of Reproductive Health, 15*(1), 57–63.

Kirby, D. (2011). *The impact of sex education on the sexual behaviour of young people* (UN Expert Paper No. 2011/12). Retrieved from http://www.un.org/en/development/desa/population/publications/pdf/expert/2011-12_Kirby_Expert-Paper.pdf

Laguna, E. (2004). *Knowledge of HIV/AIDS and unsafe sex practices among Filipino youth*. Paper presented at the 2004 Annual Meeting of the Population Association of America, Boston, MA. Retrieved from http://paa2004.princeton.edu/papers/42109

Laguna, E. (2008). Pornography and sex among young people. In *Life events of Filipino youth: An event history analysis.* Quezon City: Demographic Research and Development Foundation and University of the Philippines Population Institute.

Lucea, M., Hindin, M., Gultiano, S., Kub, J., & Rose, L. (2013). The context of condom use among young adults in the Philippines: Implications for HIV prevention. *Health Care for Women International, 34*(3–4), 227–248. http://dx.doi.org/10.1080/07399332.2012.721414

Ma, Q., Ono-Kihara, M., Cong, L., Xu, G., Pan, X., Zamani, S., … Kihara, M. (2009). Early initiation of sexual activity: A risk factor for sexually transmitted diseases, HIV infection, and unwanted pregnancy among university students in China. *BMC Public Health, 9*(1), 111. http://dx.doi.org/10.1186/1471-2458-9-111

Manalastas, E. J. (2009). Filipino men's efficacy beliefs about acquiring condoms. *Philippine Population Review, 8*(1), 61–72.

Marquez, M. P. (2008). The sexual initiation of Filipino youth. In *Life events of Filipino youth: An event history analysis*. Quezon City: Demographic Research and Development Foundation and University of the Philippines Population Institute.

Marquez, M. P. (2014). *Forum on HIV and AIDS for youth and college educators*. Paper presented at Ramada Manila Central, Manila.

MIMAROPA Regional Office & National Economic Development Authority. (2011). *MIMAROPA regional development plan 2011–2016*. Oriental Mindoro: National Economic Development Authority.

Misiri, H. (2014). Risk factors of early sexual debut among men and women - a strong predictor of HIV and sexual risk in Malawi. *Research, 1*. http://dx.doi.org/10.13070/rs.en.1.625

Moore, S. G., Dahl, D. W., Gorn, G. J., & Weinberg, C. B. (2006). Coping with condom embarrassment. *Psychology, Health and Medicine, 11*(1), 70–79. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/17129896

Mudingayi, A., Lutala, P., & Mupenda, B. (2011). HIV knowledge and sexual risk behavior among street adolescents in rehabilitation centres in Kinshasa; DRC: Gender differences. *Pan African Medical Journal, 10*. http://dx.doi.org/10.4314/pamj.v10i0.72233

National Economic and Development Authority. (2011). *MIMAROPA regional development plan: 2011–2016.* Retrieved from http://www.neda.gov.ph/wp-content/uploads/2013/10/RegIVB_RDP_2011-2016.pdf

National Statistics Office. (2010). *Gender factsheet: Women's HIV/AIDS related knowledge, attitudes and behavior*. Retrieved from https://psa.gov.ph/old/data/sectordata/ factsheets/Womens%20 HIV AIDS.pdf

Ochako, R., Ulwodi, D., Njagi, P., Kimetu, S., & Onyango, A. (2011). Trends and determinants of comprehensive HIV and AIDS knowledge among urban young women in Kenya. *AIDS Research and Therapy, 8*(1), 11. http://dx.doi.org/10.1186/1742-6405-8-11

Odu, B., & Akanle, F. (2008). Knowledge of HIV/AIDS and sexual behaviour among the youths in South West Nigeria. *Humanity & Social Sciences Journal, 3*(1), 81–88.

Oljira, L., Berhane, Y., & Worku, A. (2013). Assessment of comprehensive HIV/AIDS knowledge level among in-school adolescents in eastern Ethiopia. *Journal of the International AIDS Society, 16*(1). http://dx.doi.org/10.7448/ias.16.1.17349

Ong, G., & Tolentino, R. (2014, March 25). More young Filipinos HIV-positive. *Manila Times*. Retrieved from http://www.manilatimes.net/more-young-filipinos-hiv-positive/85420/

Philippine Statistics Authority. (2014). *Philippines National Demographic and Health Survey.* Retrieved from https://dhsprogram.com/pubs/pdf/FR294/FR294.pdf

Raymundo, C., & Cruz, G. (2004). *Youth sex and risk behaviors in the Philippines*. Diliman, Quezon City: Demographic Research and Development Foundation and University of the Philippines Population Institute.

Rejoice, P. (2013). Comprehensive knowledge of HIV/AIDS among young married women in Thiruvarur District, Tamilnadu, India. *International Journal of Current Research, 5*(6), 1533–1537.

Swenson, R., Rizzo, C., Brown, L., Vanable, P., Carey, M., Valois, R., … Romer, D. (2010). HIV knowledge and its contribution to sexual health behaviors of low-income African American adolescents. *Journal of the National Medical Association, 12*(12). Retrieved from http://www.nmanet.org/publications/ December2010/ OC1173.pdf

United Nations. (2015). *Indicators for monitoring the Millennium Development Goals: Definitions, rationale, concepts and sources.* Retrieved from http://mdgs.un.org/unsd/mi/wiki/6-3-Proportion-of-population-aged-15-24-years-with-comprehensive-correct-knowledge-of-HIV-AIDS.ashx

United Nations Children's Emergency Fund. (n.d.). *HIV-AIDS*. Retrieved from http://www.unicef.org/philippines/hivaids.html#.VeTxx5VZrIU

United Nations Children's Emergency Fund. (n.d.). *UNICEF - Definitions*. Retrieved from http://www.unicef.org/infobycountry/stats_popup4.html

United Nations Educational, Scientific, and Cultural Organization. (2009). *International technical guidance on sexuality education: An evidence-informed approach for schools, teachers and health educators*. Retrieved from http://unesdoc.unesco.org/images/0018/001832/183281e.pdf

United Nations Joint Programme on HIV/AIDS. (2006). *Report on the global AIDS epidemic.* Retrieved from http://www.unaids.org/sites/default/files/media_asset/2006_gr-executivesummaryen 0.pdf

United Nations Joint Programme on HIV/AIDS. (2010). *UNAIDS report on the global AIDS epidemic 2010*. Retrieved from http://www.unaids.org/globalreport/ AIDS info.htm

United Nations Joint Programme on HIV/AIDS. (2013). *HIV in Asia and the Pacific: UNAIDS report 2013.* Retrieved from http://www.unaids.org/sites/default/files/media_asset/2013_HIV-Asia-Pacific_en_0.pdf

Weller, S., & Davis-Beaty, K. (2002). Condom effectiveness in reducing heterosexual HIV transmission (Review). *The Cochrane Library, 4*, 1–24.

World Health Organization. (2016). *HIV/AIDS fact sheet no. 360*. Retrieved from http://www.who.int/mediacentre/factsheets/fs360/en/

Zablan, Z., Marquez, M. P., & Laguna, E. P. (2004). Reproductive health of Filipino adolescents. In C. M. Raymundo & G. T. Cruz (Eds.), *Youth sex and risk behaviors in the Philippines* (pp. 95–111). Quezon City: Demographic Research and Development Foundation and University of the Philippines Population Institute.

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