# Post-Millennial Filipinos: Renewed Hope vs Risks

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

Mass Media and ICT Use, Non-Sexual Risk Behavior, and Early Sexual Initiation of the Youth in Central Luzon

> WORKING PAPER SERIES 2016-05 Felix R. Deocampo, Jr. and Elma P. Laguna

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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 21<sup>st</sup> 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.

## Mass Media and ICT Use, Non-Sexual Risk Behavior, and Early Sexual Initiation of the Youth in Central Luzon

Felix R. Deocampo, Jr.<sup>1</sup> and Elma P. Laguna<sup>2</sup>

#### Abstract

Traditional mass media and information and communication technology (ICT) use, as well as non-sexual risk behaviors, have been positively associated with the vouth's early sexual initiation. Data from the 2013 Young Adult Fertility and Sexuality Study, consisting of 1,182 respondents ages 15-24 in Central Luzon, were used to explore these relationships. Chi-square tests and bivariate logistic regressions were employed to identify patterns and predictors of early sexual initiation vis-à-vis gender and residence. The study revealed that while traditional mass media have ultimately lost their link to the youth's early sexual initiation, ICT use and non-sexual risk behavior variables display a statistically significant pattern. Bivariate logistic regressions show that age at first Internet use and age at regular drinking are significant predictors in estimating the youth's likelihood of early sexual initiation; the younger the respondent accessed the Internet and the younger he/she engaged in regular drinking, the higher the respondent's likelihood of engaging in early sex. The likelihood is higher among female and urban Internet users, as well as among male and urban regular drinkers. Age at regular smoking displays a statistically significant association but does not show any predictive influence on the youth's early sexual initiation.

Keywords: early sex, ICT use, traditional media, non-sexual risk

#### **Background and context**

One of the growing concerns among policy makers and program managers in the area of reproductive health is the increasing number of youth being exposed to early sex. For example, around 22 percent of British Columbian youth and 30 percent of Canadian youth in 2008 and 2010, respectively, had their sexual debut before age 18 (Society of Obstetricians and Gynaecologists of Canada, 2012).

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Several studies have shown that early sexual initiation poses a great danger to the sexual health of young people. A study conducted among university students in China revealed that male early sexual initiators had a significantly higher risk of being diagnosed with a sexually transmitted disease, having a partner with a history of pregnancy, and having a partner with a history of induced abortion compared with late sexual initiators (Ma et al., 2006). Another study conducted among the adult population in the United States disclosed that early initiation of sexual intercourse was associated with various sexual behaviors, including an increased number of sexual partners and recent sexual intercourse under the influence of alcohol (Sandfort, Orr, Hirsch, & Santelli, 2008). Still another study revealed that early sexual initiation increases the risk of multiple partners, unwanted pregnancy, sexually transmitted infections, and pelvic inflammatory disease (Ashby, Arcari, & Edmonson, 2006).

Continuing urbanization coupled with tremendous technological development seem to have contributed to the rise of early sexual experience among the youth. Increased exposure to various social media and increased access to information and communication technology (ICT) have been brought about by rapid urban development and have been found to be linked to modifying the sexual behavior of young people. Various studies have confirmed this link. One study suggested that early sexual initiation is more apparent among those with Internet access at an early age (Kraus & Russell, 2008). Another study found out that watching television two or more hours a day, especially without parental regulation, is associated with an increased risk of initiating sexual intercourse within a year (Ashby et al., 2006).

Continuing urban development has also exposed young people to other risk behaviors, particularly smoking and alcoholism. These two risk-taking behaviors, when started at an early age, also show a high association with the likelihood of engaging in early sex. This was confirmed in a study conducted among African American and Hispanic urban youth. The study found that early drinkers were more likely to report, among others, unprotected sexual intercourse, multiple partners, and being drunk or high during sexual intercourse (Stueve & O'Donnell, 2005).

The Young Adult Fertility and Sexuality Study (YAFS) is the only nationally representative study that explores in detail the patterns of early sexual initiation among Filipino youth ages 15–24. In 1994, only 12.9 percent of the Filipino youth experienced their first sexual intercourse before age 18. Twenty years later, this early sexual initiation rose to 23.4 percent (Demographic Research and Development Foundation [DRDF] & UP Population Institute [UPPI], 2014).

The incidence of early sexual initiation in the Central Luzon region must be examined in greater detail. Central Luzon is one of the most highly urbanized areas in the country. Its urban population is estimated at 51.6 percent, higher than the national urban population of 45.3 percent (Philippine Statistics Authority, 2013). In this part of the country, there is rapid urbanization, as most of the formerly agricultural lands are gradually converted into industrial and commercial ones. Consequently, the use of industrial technology, mass media, and ICT is massive and increasing.

While the region welcomes the promising benefits of urbanization, it also inevitably suffers from its detrimental effects. Studies show that over the past decade, more young people in the region have been engaging in risk behaviors, both sexual and non-sexual. Recent data from the 2013 Young Adult Fertility and Sexuality Study (YAFS4) reveal that the incidence of early sexual initiation among the youth in the region is 25.4 percent, which is higher than the national level. Despite a massive government campaign, smoking incidence among the youth remains high in this region at 24.7 percent. The proportion who consume alcoholic beverages is likewise high at 41 percent.

Initial findings from YAFS4 regarding the youth's exposure to ICT are quite revealing. Two in every three youth (67.8%) in Region III have Internet access, and eight in every ten have cell phones (85.7%). Among those with Internet access, one in every four have visited websites with sexually explicit content (24.7%). Among those with cell phones, two in every five have textmates whom they have not met personally (40.7%). More than half of these young people have ever watched pornographic videos (56.0%), and around one third have read pornographic materials (32.9%).

While studies conducted abroad have revealed an interesting association between sexual and non-sexual behaviors, this remains to be explored in the Philippine setting. Specifically, studies conducted on young people in more developed societies have shown that the youth's access to ICT poses a great risk of engaging in early sexual initiation; this also needs to be confirmed using empirical data obtained locally.

Studying the patterns of early sexual initiation is imperative in arriving at sound and solid policies and programs for the youth in this region. With the increasing number of teenage pregnancies and the spread of sexually transmitted diseases, policy makers and program managers need to be enlightened through studies like this on how to redirect policies and programs to properly address the problem.

#### *Objectives of the study*

This study aims to identify the association between mass media and ICT exposure and non-sexual risk behavior and their influence on the early sexual initiation of young people aged 15–24 years old in the Central Luzon region.

Specifically, this study aims to do the following:

- 1. Describe the characteristics of the youth ages 15–24 in Central Luzon in terms of media exposure, ICT use, non-sexual risk behavior, and early sexual initiation
- 2. Identify the gender-residence differential patterns of early sexual initiation in terms of mass media exposure, ICT use, and non-sexual risk behaviors
- 3. Determine the influence of non-sexual risk behaviors and ICT use on early sexual initiation

### Conceptual Framework

Figure 1 illustrates how mass media exposure, ICT use, and non-sexual risk behaviors are associated with the youth's early sexual initiation. The study assumes that early age of access to the Internet, early age at regular smoking, and age at first regular drinking influence the youth's early sexual initiation. The mass media variables are categorized into print, radio, and television. The ICT variables include cell phone use, Internet use, and access to Internet pornography. The extent of ICT use is categorized into not using, using either cell phones or the Internet, and using both. Non-sexual risk behavior variables include smoking status and level of cigarette consumption, as well as drinking status and level of alcohol consumption. Gender and residence are treated as control variables for this study.



Figure 1. Study framework

Operational definition of terms

**Early sexual initiation** – This refers to the experience of first sexual intercourse among the youth 15–24 years old before age 18. Hence, in this study, the unit of analysis includes only those who have already experienced sexual intercourse.

Age at first Internet use – This pertains to the earliest age that the respondent first used the Internet.

Age at first regular smoking – This pertains to the earliest age that the respondent began smoking regularly.

**Age at first regular drinking** – This refers to the earliest age that the respondent began drinking regularly.

**Smoking status** – This refers to whether the respondent was regularly smoking at the time of the survey.

**Drinking status** – This refers to whether the respondent was regularly drinking alcohol at the time of the survey.

**Level of cigarette consumption** – This pertains to the number of cigarette sticks a respondent consumes in a day, which is categorized into "heavy smoker" if he/she consumes 10 sticks a day and "non-heavy smoker" if he/she consumes fewer than 10 sticks a day.

**Level of alcohol consumption** – This pertains to the number of bottles of beer that a respondent could consume during a regular drinking session.

**Cell phone use** – This refers to the purpose of using the cell phone, which is categorized into "no cell phone," "used to communicate," and "used for Internet."

**Internet use** – This pertains to the number of hours per week that the respondent uses the Internet.

**Internet pornography** – This pertains to the respondent's access or visits to websites with sexually explicit content.

**Extent of ICT use** – This pertains to the respondent's ownership of cell phones and access to the Internet, which is categorized into "no cell phone or Internet access," "with access to or use of cell phone or Internet," and "with use of and access to both cell phone and Internet."

**Print media exposure** – This pertains to the exposure of the respondent to any or all of the print mass media, specifically newspapers, tabloids, magazines, and books other than textbooks at any time during the past three months. It is categorized into "every day," "not every day," and "never."

**Radio exposure** – This pertains to the respondent's regularity of listening to the radio at any time during the past three months. It is categorized into "every day," "not every day," and "never."

**Movie exposure** – This pertains to the respondent's regularity of watching movies either in a movie theater or through DVDs or VCDs during the past three months. It is categorized into "every day," "not every day," and "never."

**Television exposure** – This pertains to the number of hours that the respondent watched television at any time during the past three months.

#### **Review of related literature**

Associating non-sexual risk behavior with sexual risk behavior has been a popular subject of research in various parts of the globe. One interesting study was conducted by Woynarowska in 2008 among a representative sample of students from the first grade of upper secondary schools. His study revealed that early sex is higher among boys than among girls. Among boys, early sex is higher among those who frequently drink vodka and beer, those who use amphetamine, those who practice truancy, and those from basic vocational schools. Among girls, early sex is higher among those with frequent truancy, daily smokers, and those who spent a lot of time outside of the home (Woynarowska, 2008). A study conducted by Stueve and Donnell (2005) among African American and Hispanic youth similarly revealed that early drinkers, both male and female, were more likely to report subsequent unprotected sexual intercourse. Still another study conducted in Taiwan revealed the same pattern, showing that adolescent alcohol use is significantly associated with premarital sex for both genders, while adolescent smoking is significantly associated with premarital sexual activity among males but not among females (Chiao, Yi, & Ksobiech, 2012).

Kraus and Russell (2008) linked early sex with Internet access and access to and consumption of sexually explicit materials. They found that male and female participants 12–17 years old with Internet access reported younger ages at first sexual intercourse compared with participants without Internet access. Brown and L'Engle (2009) reported almost the same findings. In their longitudinal study among American adolescents, they observed that early exposure of both males and females to sexually explicit content predicted, among others, more permissive sexual norms and sexual intercourse two years later.

Television viewing likewise drives young people to early sexual intercourse. In a baseline study conducted by Ashby et al. (2006) using data obtained from the 1994 and 1996 National Longitudinal Study of Adolescent Health, watching television for two or more hours per day and

a lack of parental regulation of television programming were associated with an increased risk of initiating sexual intercourse within a year. This coincides with the findings of Brown et al. (2006), which revealed that adolescents 12–14 years old from the top quintile of the sexual media diet were 2.2 times more likely to have had sexual intercourse when they became 14–16 years old than those who were in the lowest quintile of the sexual media diet.

A recent study associating ICT with early sexual initiation was conducted among middle school students in Los Angeles, California. The study examined the association between sexting (i.e., sending or receiving sexually explicit phone text or picture messages) and sexual activity among early adolescents. The study revealed that students who regularly send text messages (at least 100 times per day) were more likely to report both receiving and sending sexually explicit text messages or pictures and to be sexually active (Rice et al., 2014).

In the Philippines, predictors of the incidence of premarital sex have already been extensively studied both at the national and regional levels, but research on the determinants of early sexual initiation remains wanting. Even the patterns of early sex using the most recent data from the YAFS remain under study. The intergenerational and longitudinal study conducted in the province of Cebu determining the predictors of sexual initiation among the youth is worth mentioning. The study revealed that boys' sexual initiation was positively associated with urban residence, household wealth, and the presence of a family member, but the same did not hold true for girls. Girls' early sexual initiation was negatively associated with the mother's education but positively associated with the number of siblings (Gipson, Hicks, & Gultiano, 2014).

#### Data and methods

This study uses data from YAFS4. The YAFS is a series of national surveys on the Filipino youth, conducted since 1982 by UPPI and DRDF. Gathering data from Filipino youth ages 15 to 24 years, YAFS is 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.

YAFS4, conducted in 2013, contains the same basic data gathered in previous rounds, the last of which was conducted in 2002. YAFS4 has also expanded the range of topics and added new questions to previously existing topics. It has a new block of questions on health and lifestyle, and the block on media has been expanded to include new forms of communication technologies that were not yet well developed in 2002, such as social media and cell phones, as well as new forms of risk behaviors associated with these technologies, such as cyberbullying.

YAFS4 was conducted using face-to-face interviews as the data collection method. It covered all 17 regions of the country, 78 provinces, 681 cities and municipalities, and 1,121 barangays. The total sample size is 19,178 (9,353 males and 9,825 females).

Given its geographic focus, the present study makes use of the Region III data only. There are 1,182 sampled respondents in the region. The analysis makes use of unweighted data.

Univariate and bivariate analyses were conducted to describe the youth in the region and to determine the differences in early sexual initiation, particularly according to gender and residence. A logistic regression model was estimated to determine the likelihood of early sexual initiation, focusing on age at first access to the Internet, age at first regular smoking, and age at first regular drinking. To generate and transform data, the Statistical Package for the Social Sciences (SPSS) was used for this study.

#### Results

#### Profile of young people in the region

More than half of the respondents (55.8%) are in the ages of 15-19, and about three in four (73.0%) have never been married. Most of them are females (53.5%) and rural dwellers (64.6%). Male respondents slightly outnumber the female respondents in the younger cohort (59.6% vs. 52.4%), but the latter outnumber the former in the older cohort (47.6% vs. 40.4%). The proportions of younger and older cohorts in the urban areas are similar to those of the rural areas.

There are more unmarried male respondents than unmarried female respondents (86.2% vs. 61.6%). The proportion of unmarried and married respondents remains the same across urban-rural residence (Table 1).

Less than 10 percent of the young people in the region have daily exposure to any of the print media such as newspapers, magazines, tabloids, comics, or books other than textbooks (Table 2). The majority (62.4%) are occasionally exposed to print media, while a sizeable proportion (28.6%) is not exposed at all. Daily exposure to these print materials is more apparent among female youth (12.0%), while male respondents appear to be more occasional readers (64.7%). There appears to be no urban-rural pattern insofar as exposure to print media is concerned.

Demographic	Ge	nder	Residence	
characteristics	Male	Female	Urban	Rural
Age				
15–19	59.6	52.4	56.9	55.1
20–24	40.4	47.6	43.1	44.9
Total	46.5	53.5	35.4	64.6
Marital status				
Never married	86.2	61.6	73.7	72.6
Ever married	13.8	38.4	26.3	27.4
Total	46.5	53.5	35.4	64.6

Table 1. Selected demographic characteristics of youth 15–24 years old by gender and residence (n = 1,182)

More than two in every five young people in the region listen to the radio every day (41.2%), while about half (50.4%) occasionally listen to the radio. One in every twelve has no exposure to the radio. Female respondents have higher daily exposure to the radio (46.5%), while male respondents have occasional exposure only (56.4%). The proportion of radio listeners is equal across urban-rural residence.

Young people in the region occasionally watch movies in movie houses or on VCD or DVD (74.7%). While nearly 10 percent watch movies every day, a sizeable proportion (16.2%) did not watch movies during the past three months. More male respondents have daily access to movies (11.5%), while more female respondents did not watch movies within the same period (21.2%). Again, no notable urban-rural variation in movie watching is evident.

More than four in every five (83.7%) respondents watch television daily, and only 2 percent did not watch television within the last three months. Female and urban respondents slightly outnumber their male and rural counterparts insofar as daily television watching is concerned. Male and rural respondents are occasional television viewers, while more female and urban respondents did not watch television in the last three months.

On the average, young people spend 19.4 hours per week watching television, with male and rural respondents watching television for a longer duration (21.57 hours and 20.45 hours, respectively) than their female and urban counterparts (17.5 hours and 17.48 hours, respectively; Table 2).

Mass media exposure	Gender		Resid	Residence		
	Male	Female	Urban	Rural		
Print						
Every day	5.6	12.0	9.6	8.8	9.1	
Not every day	64.7	60.3	62.2	62.4	62.4	
Never	29.6	27.7	28.2	28.8	28.6	
Radio						
Every day	35.1	46.5	42.8	40.3	41.2	
Not every day	56.4	45.3	49.8	50.8	50.4	
Never	8.5	8.2	7.4	8.9	8.4	
Movies/DVD/VCD						
Every day	11.5	7.1	8.1	9.7	9.1	
Not every day	78.2	71.7	75.6	74.2	74.7	
Never	10.4	21.2	16.3	16.1	16.2	
Television						
Every day	81.3	85.8	85.9	82.5	83.7	
Not every day	17.5	11.6	11.2	16.0	14.3	
Never	1.3	2.7	2.9	1.6	2.0	
Mean no. of hours	21.57	17.50	17.48	20.45	19.40	

Table 2. Traditional mass media exposure of youth 15–24 years old by gender and residence (n = 1,182)

Only one in every seven (14.5%) young people in the region had no cell phone at the time of the survey. Three in every four (75.4%) have used cell phones for calling and sending text messages, while one in every ten have also used cell phones for accessing the Internet (10.2%). More male than female respondents have no cell phones (16.5% vs. 12.7%), while more female than male respondents have access to the Internet through cell phones (12.0% vs. 8.0%). There is no notable urban-rural variation in the ownership and use of cell phones. Considering the skewness in the distribution of this variable, with most reporting that they use cell phones primarily for communication, the variable that measures cell phone function was excluded from the bivariate analysis.

Two in every three young people (68.2%) have access to the Internet. Internet access is used for chatting (29.3%), surfing (31.0%), and watching videos (17.6%), among others. More females than males used the Internet for chatting (32.6% vs. 25.8%), while more males than females used the Internet for surfing (34.9% vs. 27.3%) and for watching videos (22.3% vs. 13.1%). Again, there is no notable disparity in Internet use between urban and rural respondents.

The mean age at first Internet use is 14.6. Male and urban respondents started using the Internet earlier than their female and rural counterparts did (14.1 vs. 15.1 years old and 14.9 vs. 14.2 years old, respectively). More male and urban respondents started using the Internet at age 14 and below.

The average number of hours spent on Internet use is 6.5, although only 30 percent of those who used the Internet did so for more than six hours. More male than female respondents spent more time on Internet use (8.61 hours vs. 4.45 hours). There is no notable difference in the hours of Internet use between urban and rural respondents.

A quarter (25.3%) of the respondents have ever visited websites with sexually explicit content. More males than females have ever visited these websites (43.5% vs. 7.8%). Likewise, slightly more rural respondents have ever visited these websites compared with their urban counterparts (27.3% vs. 22.0%).

Three in every five (61.3%) young people in the region have both cell phones and Internet access, while only a small proportion (7.7%) have no exposure to ICT through cell phones or Internet access. A higher proportion of male and urban respondents have both cell phone and Internet access (63.6% and 65.3%, respectively; Table 3). Again, given its skewed distribution, this variable was excluded from the bivariate analysis.

ICT exposure and use	Ge	nder	Resid	lence	Total
	Male	Female	Urban	Rural	
Cell phone use					
No cell phone	16.5	12.7	14.4	14.5	14.5
Used to call/text	75.5	75.3	76.8	74.6	75.4
Used for Internet	8.0	12.0	8.9	10.2	10.2
N of cases					1,182
Internet use					
Chat	25.8	32.6	31.6	27.9	29.3
Surf the Internet	34.9	27.3	29.6	31.9	31.0
Watch videos	22.3	13.1	15.5	18.9	17.6
N of cases					806
Age at first Internet use					
14 and younger	54.4	41.8	54.6	44.0	48.0
15 and older	45.6	58.2	45.4	56.0	52.0
Mean age	14.1	15.1	14.2	14.9	14.6
N of cases					806

Table 3. ICT use of youth 15–24 years old by gender and residence

ICT exposure and use	Ge	ender	Resid	Total	
	Male	Female	Urban	Rural	-
Hours per week					
6 hours and below	56.2	81.8	70.1	68.7	69.2
7 hours and higher	43.8	18.2	29.9	31.3	30.8
Mean no. of hours	8.61	4.45	5.98	6.79	6.5
N of cases					806
Visited websites with sexually explicit	43.5	7.8	22.0	27.3	25.3
content					
N of cases					806
Extent of ICT exposure					
No cell phone and	8.5	7.0	6.9	8.1	7.7
Internet					21.0
With cell phone or	27.8	33.9	27.8	32.9	31.0
With cell phone and	63.6	50.2	65 3	50.0	61.3
Internet	05.0	39.2	05.5	39.0	01.5
N of cases					1,182

Table 3. ICT use of youth 15–24 years old by gender and residence (con't)

A considerable number of young people in the region are exposed to non-sexual risk behaviors. One out of four are regularly smoking, with male smokers outnumbering their female counterparts (45.5% vs. 7.1%; Table 4). On the average, respondents started to smoke regularly at the age of 17. Boys and urban residents started younger than the girls and rural residents did (at 16.7 and 16.2 years old, respectively). Smokers consume an average of seven cigarettes per day, with boys and urban residents consuming more than their female and rural counterparts.

Two in every five (41.3%) respondents are regular drinkers. While there are more male than female regular drinkers (64.2% vs. 21.4%), the proportion remains the same across urbanrural residence. Like smoking, regular drinking started at the age of 17. There is no notable gender variation in drinking, but urban respondents started drinking a little younger than their rural counterparts did (16.7 years old vs. 17.1 years old, respectively). An average regular drinker consumes 3.4 bottles of beer. Expectedly, boys consume more than girls do (3.61 bottles vs. 2.58 bottles). Beer consumption, however, remains the same across urban-rural residence. In terms of sexual behavior, around two in every five (39.3%) young people in the region ever had sex. Among them, more than half (56.3%) had sex before the age of 18 (i.e., early sex). The mean age at first sex is 17.3; this is almost uniform across gender and residence.

Selected risk behavior	Ger	nder	Resid	lence	Total	N of
	Male	Female	Urban	Rural		cases
Smoking						
Regularly smoking	45.5	7.1	21.5	26.8	25.0	1,182
Age at regular smoking						295
16 and below	44.8	37.8	54.4	39.0	44.0	
17 and older	55.2	62.2	45.6	61.0	56.0	
Mean age	(16.7)	(17.5)	(16.2)	(17.2)	(16.9)	
Smoking consumption						295
Less than 8 sticks a day	57.3	84.4	56.7	63.5	61.4	
8 sticks and higher a day	42.7	15.6	43.3	36.5	38.6	
Average sticks per day	(7.44)	(4.93)	(6.92)	(7.12)	7.1	
Drinking						
Regular drinking	64.2	21.4	40.4	41.8	41.3	1,182
Age at first drinking						493
16 and younger	61.5	58.4	65.7	58.0	60.6	
17 and older	38.5	41.6	34.3	42.0	39.4	
Mean age	(16.9)	(17.2)	(16.7)	(17.1)	(17.0)	
Drinking consumption (beer						358
only)						
3 bottles and below	65.9	82.9	71.1	69.2	69.8	
4 or more bottles	34.1	17.1	28.9	30.8	30.2	
Average no. of bottles	(3.61)	(2.58)	(3.43)	(3.35)	(3.4)	
Early sexual initiation						
Mean age at first sex	17.1	17.5	17.1	17.4	17.3	465
First sex below 18	60.0	52.4	60.1	54.3	56.3	465

Table 4. Percent distribution of youth 15–24 years old engaged in non-sexual and sexual risk behavior

Note. Figures in parentheses are based on fewer than 30 cases.

#### Patterns of early sexual initiation

One of the specific objectives of this study is to identify patterns of early sexual initiation among the young people in the Central Luzon region. This study identifies some mass media and ICT use variables and non-sexual risk behaviors as possible factors that lead to variation in the level of early sex in the region.

Table 5 shows the early sexual initiation of the youth in Central Luzon according to use of various traditional mass media, controlling for gender and residence. It shows that early sexual initiation is almost uniform across various levels of exposure to mass media, even when gender and residence are controlled. The prevalence of early sexual initiation is higher among those who have no exposure to radio (66.7%) than among those with daily and occasional exposure (55.2% and 55.5%, respectively). The variation, however, is not statistically significant.

Mass media exposure	Perc	d below			
	Ge	nder	Resid	lence	Total
	Male	Female	Urban	Rural	
Print					
Every day	83.3 <sup>a</sup>	52.4	60.0 <sup>a</sup>	59.1	59.3
Not every day	57.6	52.5	58.2	53.5	55.4
Never	63.2	52.4	64.6	54.5	57.6
Radio					
Every day	57.3	53.3	59.4	52.8	55.2
Not every day	60.6	48.5	58.8	53.7	55.5
Never	68.4	65.2	71.4	64.3	66.7
Movies/DVD/VCD					
Every day	67.5	54.5	66.7	61.0	62.9
Not every day	59.0	50.0	58.1	53.3	55.0
Never	52.9	57.6	64.0	52.9	56.6
Television					
Every day	62.2	52.1	61.4	54.7	57.1
Not every day	52.3	56.5	61.1	51.0	53.7
Never	33.3 <sup>a</sup>	50.0	20.0 <sup>a</sup>	62.5	46.2
Mean no. of hours	19.86	18.64	15.67	21.49	19.31

Table 5. Percent distribution of the youth's early sexual initiation according to mass media exposure, controlling for gender and residence (n = 465)

<sup>a</sup>Fewer than five cases.

Although not statistically significant, a higher percentage of early sexual initiation was reported among young people who watched movies in a movie house or on DVD or VCD (62.9%) than among those who were occasionally exposed or not exposed to this form of media (55.0% and 56.6%, respectively). This becomes more apparent among male and urban dwellers, although the variation is not significant. The prevalence of early sex was also uniform across different levels of exposure to television and across gender and residence.

Table 6 shows the percentage distribution of the youth's early sex experience according to their use of ICT. When it comes to Internet use, a higher prevalence of early sex among males was found among those who use the Internet for surfing as compared to those who use it mainly for chatting and watching videos (75.0% vs. 60.7% and 59.5%, respectively). In the same manner, a lower prevalence of early sex was found among females who use the Internet for chatting as against those who use it for surfing. The same pattern was also found among urban residents.

Age at first access to the Internet displays a significant variation in the early sexual experience of the young people in the region. Around two in every three respondents who accessed the Internet at age 14 or younger reported that they already experienced early sex (66.1%), compared with only around one in every two (48.6%) among those who accessed the Internet at a later age. The percentage with early sexual experience is likewise higher among males and urban and rural youth who first accessed the Internet at age 14 and younger (74.7%, 70.0%, and 63.1%, respectively). Notwithstanding the seeming association in the timing of Internet use and experience of early sex, the result does not imply that the occurrence of one event (i.e., Internet access) leads to another, such as early sex.

The number of hours spent on Internet use also exhibits a significant variation in early sexual initiation among the youth. As shown in Table 6, among those who used the Internet at least seven hours a week, 68.9 percent have early sex experience. Among those who used the Internet for less than seven hours, less than half (48.1%) have early sex experience. Lower Internet hours is associated with a lower prevalence of early sex. This variation is statistically significant among males (52.6%) and urban and rural respondents (53.4% and 44.6%, respectively) but not among female respondents.

Visits to websites with sexually explicit content do not show a significant variation in the youth's early sexual initiation. Among urban dwellers, those who visit websites with sexually explicit content have higher early sex experience (76.3%) than those who do not visit such websites (52.2%).

ICT use	Percent with first sex at age 17 and below					low
	Ger	nder	Resid	Residence		N of cases
	Male	Female	Urban	Rural	-	
Internet use						
Chat	60.7	33.3*	48.7*	48.4	48.5*	103
Surf the Internet	75.0*	52.6	74.4*	61.0	66.3*	98
Watch videos	59.5	(44.4)	52.6	59.4	56.9	51
Age at first access						
14 and younger	74.7**	47.2	70.0*	63.1*	66.1**	115
15 and older	52.6	43.4	52.6	46.6	48.6	173
Mean age at first	14.0	15.1	13.7	14.7	14.3	160
access						
Hours per week						
6 hours and below	52.6*	43.2	53.4*	44.6**	48.1***	185
7 hours and higher	74.7	50.0	76.5	65.2	68.9	103
Mean hours	12.0	4.2	8.4	10.4	9.6	160
Visited websites with						
sexually explicit						
content						
Never visited	64.5	41.8	52.2*	51.4	51.7	174
Ever visited	61.0	(64.3)	76.3	53.9	61.4	114

 Table 6. Percent distribution of the youth's early sexual initiation according to ICT use, controlling for gender and residence

Note. Figures in parentheses are based on fewer than 30 cases.

\* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001.

Table 7 shows the early sex experience of the youth in the region vis-à-vis non-sexual risk behaviors, controlling for gender and residence. It shows that regular smokers have significantly higher early sex experience (62.2%) compared with non-regular smokers (52.9%). No gender differential is observed. In urban areas, there are more regular smokers with early sex experience than non-regular smokers (74.1% vs. 52.4%, respectively).

Age at regular smoking displays a significant variation in the early sexual initiation of the youth in the region. Those who started regular smoking at age 16 and younger have higher early sex experience (76.9%) than those who started regular smoking at older ages (53.3%). This pattern holds true among the male respondents (78.6% vs. 52.2%) and among the rural residents (75.0% vs. 48.8%).

Among the regular smokers, the number of sticks consumed in a day likewise exhibits a significant variation in the youth's early sexual initiation. Specifically, a lower percentage of those who consume fewer than eight sticks a day have early sex experience (55.9%) than those

who consume eight sticks or more a day (69.2%). Gender and residence variables do not show any significant variation.

Like smoking status, drinking status shows a significant differential in the young people's early sexual initiation. Compared with non-regular drinkers, a higher percentage of regular drinkers have early sex experience (60.5% vs. 51.6%). No significant gender differential in early sex experience is shown. However, in urban areas, regular drinkers have significantly higher early sex experience (66.7%) than non-regular drinkers (52.1%).

Non-sexual risk		Percent with first sex at age 17 and below				
behavior	Gen	ıder	Resi	dence	Total	N of
	Male	Female	Urban	Rural	-	cases
Smoking						
Regularly smoking						
Not regular smoker	56.5	51.2	52.4**	53.2	52.9*	293
Regular smoker	62.2	62.5	74.1	56.1	62.2	172
Age at regular smoking						
16 and below	78.6***	(66.7)	78.8	75.0*	76.9***	65
17 and older	52.2	(60.0)	(68.0)	48.8	53.3	107
Mean age	16.5	16.7	15.7	17.1	16.6	107
Smoking consumption						
Less than 8 sticks/day	55.4	(57.9)	(72.4)	48.4	55.9*	93
8 sticks and above/day	68.5	(80.0)	(75.9)	65.3	69.2	78
Drinking						
Regular drinking						
Not regular drinker	51.2	51.7	52.1*	51.4	51.6*	217
Regular drinker	61.8	55.1	66.7	57.0	60.5	248
Age at first drinking						
16 and younger	73.9***	67.7*	76.7**	69.8***	72.6***	146
17 and older	45.3	(36.8)	46.7	42.7	43.8	105
Mean age	16.5	16.4	16.1	16.7	16.5	152
Beer consumption						
3 bottles and below	59.8	(55.6)	62.2	56.5	58.8	114
4 or more bottles	62.2	(66.7)	(69.2)	59.3	62.5	80
Average no of bottles	41	34	41	39	4 0	117

Table 7. Percent distribution of the youth's early sexual initiation according to non-sexual behavior, controlling for gender and residence

*Note*. Figures in parentheses are based on fewer than 30 cases.

\* p < .05. \*\* p < .01. \*\*\* p < .001.

Age at first drinking is one of the strongest variables that display a significant variation in the youth's early sexual initiation. A higher percentage of youth with early sex experience is found among those who started drinking at age 16 and younger (72.6%) as compared to those who started regular drinking at later ages (43.8%). This significant variation remains true across gender and residence. No significant variation is observed according to the number of bottles of beer consumed during the drinking session.

# Predictors of early sexual initiation: Age at first Internet use, age at regular smoking, and age at regular drinking

Based on the bivariate analysis, three non-sexual risk behaviors show a significant association with early sexual experience: age at first Internet use, age at regular smoking, and age at regular drinking. To explore possible causality, age at first Internet use, regular smoking, and regular drinking should have occurred before the respondent engaged in early sex. Hence, for this analysis, those whose Internet use, regular smoking, and regular drinking occurred after or simultaneously with early sex experience are excluded.

Data reveal that among those who have already experienced first sex, three quarters (75.1%) first accessed the Internet before their first sexual experience. Around two in every five were also regular smokers and regular drinkers prior to their first sexual encounters (41.9% and 39.4%, respectively). Data also show a sufficient number of cases that warrant estimation of the likelihood of engaging in early sex (Table 8).

	Percent with first sex experience	N of cases
Age at first Internet use		
Prior to first sex	75.1	211
At or later than first sex	24.9	70
Age at first regular smoking		
Prior to first sex	41.9	72
At or later than first sex	58.1	100
Age at first regular drinking		
Prior to first sex	39.4	99
At or later than first sex	60.6	152

 Table 8. Percent distribution of first sex experience according to selected predictor variables

Table 9 shows that age at first Internet use has an inverse effect on the likelihood of experiencing early sex. This means that the earlier the youth accessed the Internet, the higher their likelihood of experiencing early sex. Specifically, the odds of experiencing early sex increases by 18.4 percent for every one-year decrease in the age at first Internet use. The effect is higher and more significant for females relative to males. For males, a one-year decrease in the age at first Internet use means a 15.8 percent increase in the odds of experiencing early sex; for females, the odds increase by 34.7 percent. The effect is also higher in rural areas than in urban areas, although only the odds ratio in the urban areas shows statistical significance.

Age at regular drinking appears to be a more important factor in the youth's early sexual exposure. Similar to the pattern found in Internet use, the earlier one gets into drinking, the higher the likelihood of engaging in early sex. Specifically, as the age of drinking initiation gets younger, the likelihood of engaging in early sex increases by 54.5 percent. This link is highly significant among male regular drinkers. The influence is also higher in urban areas than in rural areas, although it is more significant in the rural areas.

On the other hand, age at first regular smoking did not show statistical significance in predicting the likelihood of engaging in early sex.

Predictors	Total		Gender		Residence	
	Odds	Exp B	Exp B	Exp B	Exp B	Exp B
			(Male)	(Female)	(Urban)	(Rural)
Age at first Internet use	203	.816**	.842*	.653**	.778*	.839
Age at first regular smoking	162	.850	.873	.701	.545	.894
Age at regular drinking	788	.455***	.473***	.343	.365*	.503**

Table 9. Bivariate logistic regression estimating the likelihood of engaging in early sex

\* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001.

#### Discussion

The young people in Central Luzon are generally teenagers, unmarried, mostly females, and rural dwellers. They have high exposure to traditional mass media, particularly television and radio.

The youth in the region are keeping pace with technological advancements, as almost all of them have cell phones used primarily for communication. A significant percentage use their cell phones for online information purposes.

In addition to young people's cell phone use, a sizeable number of them also have access to the Internet, primarily for chatting and surfing. On the average, they access the Internet as young as 14 years old and usually spend around 6.5 hours per week on the Internet. A quarter of those with Internet access have accessed websites with sexually explicit content. Only a few have not utilized ICT through cell phones or the Internet.

A quarter of the youth in the region are regular smokers, with male smokers outnumbering the female smokers. Regular smoking usually starts at 17 years old, with males and urban residents starting younger than their female and rural counterparts. Regular smokers can consume an average of seven cigarette sticks a day, with males consuming more than females. Two fifths of the youth are regular alcohol drinkers, with more male than female drinkers. They become regular alcohol drinkers at an average age of 17, with male and urban respondents starting a little earlier than their female and rural counterparts. On the average, they consume three to four bottles of beer per drinking session. Almost two fifths of them have already experienced sexual intercourse, with 17 as the average age at first sexual intercourse. Among those who have had sex, the majority first experienced it before the age of 18.

While a large number of the youth are exposed to traditional mass media, media exposure has no significant pattern in the youth's early sexual initiation. This runs counter to the existing literature, which commonly associates traditional mass media, particularly television, with early sexual initiation. This may be attributed to young people's declining consumption of traditional media platforms.

As can be gleaned from the results of this study, most of the ICT use variables display a significant pattern in the youth's early sexual initiation. When used for chatting, Internet access seems to be protective against engagement in early sex, as those who reported this Internet function have a lower incidence of early sex than those who reported other uses of the Internet, such as surfing. Females and urban dwellers who use the Internet for chatting have a lower prevalence of early sex than their male and urban counterparts. In contrast, more males and urban dwellers who use the Internet for surfing reported that they have engaged in early sex. More young people who started accessing the Internet at an early age reported early sex experience compared with their counterparts who were exposed to Internet use at later ages. Longer hours of Internet use also display a significant variation in early sex experience, particularly among male, urban, and rural residents. These findings support the study of Kraus and Russell (2008) associating Internet access and gender with early sex.

In general, the findings confirm the important role of the Internet in today's young generation and the opportunities it presents as a major source of information. When it comes to sexual behavior, the findings highlight its significant association, specifically with early sexual initiation.

Results also show the persistent significant association of non-sexual behaviors such as smoking and drinking with young people's early sexual initiation. In particular, early sexual initiation is higher among those who are regular smokers, especially those living in urban areas. A younger start to regular smoking is associated with early sex experience, particularly among the males and rural residents. Those with higher smoking consumption also exhibit higher early sex experience, although no variation in gender and residence is shown. Similarly, regular alcohol drinkers also have higher early sex experience, particularly in urban areas. Those who began drinking at an earlier age also have higher early sex experience; this is true regardless of gender and residence.

The logistic regression estimates further confirm the pattern found in the bivariate analysis. In particular, age at first Internet use is found to be a significant predictor of early sexual initiation. When compared across residence and gender, the effect of the timing of Internet first use on early sex is more significant among females and only in urban areas.

Age at first regular drinking is also a significant determining factor in the youth's early sexual initiation. A younger introduction to drinking leads to a higher likelihood of engaging in early sex. But when gender and residence are considered, the effect of age at first regular drinking is only statistically significant among males and significantly higher in urban than in rural areas. This study supports the finding of Woynarowska (2008) that early sex is relatively higher among those who frequently drink vodka and beer. But it somehow differs from the findings of Chiao et al. (2012), which revealed that adolescent alcohol use is significantly associated with premarital sex for both genders. In the same manner, the higher effect of age at first regular drinking on early sexual initiation among urban residents somehow confirms the finding of Gipson et al. (2014) that boys' early sexual initiation is positively associated with urban residence.

Although the bivariate analysis points to the significant association of age at first regular smoking and early sexual initiation, this pattern was not sustained in the logistic regression analysis. This could be due to data limitations, as among the three predictor variables, age at regular smoking has the smallest number of cases.

#### Summary and recommendations

This study aimed to investigate the influence of mass media and ICT use on the early sexual initiation of the youth in Central Luzon. It also aimed to investigate whether non-sexual behavior influences sexual behavior (in this case, the early sexual experience of the youth).

The study reveals that while traditional mass media do not create a significant variation in the early sexual experience of the youth in the region, most of the ICT use variables show a significant variation. These ICT use variables include the type of Internet use, age at first Internet use, and number of hours of Internet use. Most of the non-sexual risk variables also show a significant variation.

Based on logistic regression, the earlier the youth accessed the Internet and the earlier they started drinking alcohol regularly, the higher the likelihood of early sexual initiation. The likelihood of engaging in early sex is higher and more significant among female than male Internet users and statistically significant among urban but not among rural Internet users. Similarly, the younger one starts drinking regularly, the higher the chances of getting into early sex. The effect of age at first regular drinking, however, is statistically significant only among male regular drinkers and significantly higher among urban as compared to rural regular drinkers.

The high proportion of young people in Central Luzon who have engaged in early sexual initiation calls for a strategic program that addresses not only the early sexual activity of young people, but also and more importantly its consequences. Doing this entails understanding the context and circumstances that lead to such behavior of young adolescents. In the case of young people in Central Luzon, such exploration is relevant given the spillover effects of urbanization and development that the region enjoys because of its proximity to the National Capital Region. Do young people in Region III behave in similar ways as young people from the National Capital Region? What kind of programs should be implemented to address the needs and concerns of contemporary young people in the region?

Programs for young people are already in place. Perhaps what is needed is to establish and maintain an inter-agency collaboration to unify youth-related plans or programs addressing risky sexual and non-sexual behaviors, including the strengthening of networks among partner agencies and local government units. The development of the Adolescent Health and Youth Development (AHYD) program by the Commission on Population in the region is already a good mechanism to instill awareness among the youth, although there is admittedly a need to further implement its strategies and assess its effectiveness. The participation of local media, youth, and other related stakeholders in the development, implementation, and assessment of AHYD strategies should also be considered.

Results of the study reinforce yet again the need to strengthen policies and programs, specifically information and education campaigns for young people. Local government may set up or improve on existing teen information centers/hubs/kiosks/organizations that focus not only on age- and development-appropriate but also on value-laden adolescent sexuality and reproductive health information and services among local government units, schools, and other groups, including information dissemination that would help prevent non-sexual behaviors among adolescents. Parallel to this is a serious implementation of Republic Act No. 10354 Section 14 on age- and development-appropriate reproductive health education for adolescents in formal and non-formal learning systems.

As the youth turn their focus to ICT as the new media, policies and programs must therefore be directed toward the responsible use of this technology. This new media can also be used by the AHYD as a tool for educating the youth on the possible consequences of their sexual activities. Without discounting the influence of mass media on the behavior of the youth, social media–based strategies may emphasize the prevention of risky sexual and non-sexual behaviors. This can be done by coordinating with concerned agencies such as the Public Information Agency and local media partners to utilize social media in advocacy campaigns. The role of parents and teachers in educating young people on the responsible use of ICT cannot be ignored. Parents should strive to strike a balance between allowing independent exploration and providing an appropriate level of parental oversight on their children regarding ICT use.

It must be emphasized that youth-related policies concerning sexuality must not be formulated in isolation. These policies must consider the non-sexual risk behaviors that go hand in hand with sexual behavior. This study supports the existing studies showing that young people first tried out non-sexual health risks, particularly drinking, before engaging in sexual health risks. Hence, one aspect of the media-based strategies may include the prevention of the youth's risky sexual and non-sexual behaviors, taking into account the age, gender, residence, and educational attainment of the target youth. As revealed in this study, the youth behave differently according to their gender and place of residence.

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## APPENDIX List of variables

Variable	Questions	Variable transformation
name		
Dependent Var	iable	
I63	How old were you then? (referring to age	Early sex if below 18
	at first sex)	No early sex if otherwise
Independent Va	ariables	
G23	At what age did you start smoking	Age at first regular smoking
	regularly? (Age in completed years)	must be prior to age at first
		sex
G22	Do you currently smoke?	(none)
G24	On the average, how many sticks of	Classified into "10 sticks
	cigarettes do you consume per day?	per day" and "more than 10
		sticks per day"
G34	Do you currently drink?	(none)
G36	At what age did you start drinking?	Age at first regular drinking
G39	On the average, how many	Only beer is considered and
	bottles/shots/glasses do you consume per	measured by bottles
	drinking session?	
E4	At what age did you start to use the	Age at first Internet use
	Internet? (age in completed years)	must be prior to age at first
		sex
E1a to E1j	I will mention different forms of media.	Classified into print media
	Please tell me if you use them and how	(items a, b, c, and d),
	often during the past three months.	broadcast media (items f
		and g), and tri-media (items
		h, i, and j) and categorized
		as "daily," "not daily," and
		"never"
E12	Do you own a cell phone?	(none)
E17	What do you use your cell phone for?	Classified into "no Internet
		purpose" and "with Internet
		purpose"
E3	Do you use the Internet?	(none)
E4	At what age did you first use the Internet?	(none)
E5	What do you do when you use the	Picked only the following:
	Internet?	chat, surf, and watch videos

		(as the things mostly done)
E6	How do you access the Internet?	Categorized into "home
		connected" and "not home
		connected"
	APPENDIX	
	List of variables (con't)	
Variable	Questions	Variable transformation
name		
E11H	On the average, how long do you use the	(none)
	Internet in a week?	
E26	Have you ever visited websites with sexual	ly (none)
	explicit content?	
E3, E12	Do you use the Internet?	Categorized into "no Internet
	Do you own a cell phone?	or cell phone," "with Internet
		or cell phone " and "with

		or cell phone," and "with
		Internet and cell phone"
SEX	Sex	(none)
Y5	Urban-rural stratum	(none)

