

# Knowledge of HIV and AIDS among call center agents in Cebu City, Philippines

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## ABSTRACT

Confirmed cases of human immunodeficiency virus (HIV) infection and acquired immune deficiency syndrome (AIDS) have continued to increase in the Philippines, with Region VII (Central Visayas) consistently among the top five regions with the highest disease incidence. Knowledge on HIV and AIDS is important in preventing its spread because lack of its awareness can expose individuals to high-risk behaviours. Among the identified high-risk groups for HIV/AIDS exposure are the call center agents. In this study, the knowledge on HIV/AIDS and profile of call center agents in Cebu City were assessed. A total of 388 respondents (selected by snowball sampling) working as call center agents at IT Park, Cebu City were requested to participate in the study. Subsequently, only 289 completed the questionnaire. Most respondents were aged 24 to 29 years old (53%), single (85.8%), female (59.2%), college graduate (67.5%), and were earning a half-month salary of Php 3,000 to 13,124.99. More than majority (61.2%) had a high level of knowledge on HIV/AIDS ( $\bar{x}$ : 78.3%, SD 12.9). Statistical analyses revealed that age and educational attainment were found to be correlated with the knowledge of HIV/AIDS ( $p$ -values < 0.05). Results also implied that call center agents who are younger (below 24 years old) and who have not graduated from college should be targeted for knowledge enhancement on HIV/AIDS.

**Keywords:** Central Visayas, high-risk groups, lack of awareness, socio-demographic profile

## I. INTRODUCTION

Human immunodeficiency virus (HIV) infection and acquired immune deficiency syndrome (AIDS) are pandemic diseases. In the Philippines, there has been a steady increase in the number of confirmed HIV/AIDS cases since its first detection in 1984. A significant proportion of these cases have become full-blown. Despite government efforts to reduce the disease

spread, new cases are added each year. Central Visayas (Region VII), where Cebu City is located, has consistently been one of the top five regions in the country with the highest number of recorded and confirmed positive cases (NHSS, 2016).

Cebu City is a hub for the call center industry. People working in this industry are considered to be among the populations-at-risk for HIV infection (Kabamalan et al., 2010). Call center workers are commonly perceived to

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be more promiscuous, and are prone to vices that are considered as risk factors for risky sexual behaviors (Kabamalan et al., 2010). Although knowledge about the disease is important for its prevention (Fisher & Fisher, 1992), some call center agents lack knowledge on HIV/AIDS and has risky behaviours which can increase their likelihood of contracting the disease (Melgar, Bangi, Mandel, & McFarland, 2012).

Apart from knowledge, several socio-demographic variables have been found to be significantly related to the prevalence of HIV infection (Korra, Bejiga, & Tesfaye, 2005). While a previous study in the Philippines looked at the effects of work and lifestyle on economic, social, and health situation among call center agents (Kabamalan et al., 2010), no study has been done to correlate socio-demographic profile with the level of knowledge on HIV/AIDS. This study appears to be the first in the country that investigated such correlation. Thus, the study aimed to determine if correlation exists between the socio-demographic profile (including age, gender, civil status, educational attainment and monthly income) and the level of knowledge of selected call center agents in Cebu City, Philippines.

**II. METHODOLOGY**

A total of 289 regular call center agents (regardless of company) from IT Park, Cebu City, who were between 18 to 40 years of age, were selected using snowball technique. The snowball sampling technique was employed as the HIV/AIDS topic might be sensitive to most call center companies. Call center agents were selected regardless of the company. IT Park is an area in Cebu City, Philippines where many call center companies are located.

The instrument used was based on a questionnaire (with an alpha coefficient of 0.81) that anchored on the WHO AIDS program on knowledge, attitudes, beliefs and practices (KABP) survey (Leili, Elham, & Farkhondeh, 2008) and on previous literatures (Tavoosi, Zaferani, Enzevaei, Tajik, & Ahmadinezhad, 2004; Ayranci, 2005; Montazeri, 2005). The original instrument had three answer options: “yes”, “no”, and “don’t know”. In this study, the “don’t know” option was removed. The instrument consisted of two sections: (a) profile; and (b) HIV/AIDS knowledge; covering general knowledge on HIV/AIDS and its mode of transmission. The first section asked about the respondent’s age, gender, civil status, educational attainment, and income every 15 days. The second section contained 19 statements regarding HIV/AIDS knowledge and HIV/AIDS transmission routes. Scores

were counted based on the number of correct answers. The maximum possible score for this section was 19. The different levels of knowledge were determined based on Sturge’s formula: low = 3.65 and below, below average = 3.66 – 7.31; average = 7.32 – 10.97; high = 10.98 – 14.63; very high = 14.64 – 19. The questionnaire was pre-tested on 100 respondents call center agents from IT Park, Cebu City. Using the Kuder-Richardson 20 formula, the internal reliability was found to be 0.72.

Answers and scores from the questionnaires were encoded into Microsoft Excel using appropriate variable coding. The coded file was later imported into a statistical software. Descriptive statistics were employed where applicable. One-way analysis of variance (ANOVA), independent t-tests, Pearson product moment correlation and Kruskal-Wallis tests were performed. The level of significance was set at 0.05α or 95%.

The study was conducted in accordance with the principles of Helsinki declaration developed by the World Medical Association and the Philippine Health Regulations Ethical Board. Informed consent was obtained from the respondents. Approval was also acquired from the Research Department of the Vicente Gullas College of Medicine, University of the Visayas, Cebu.

**III. RESULTS AND DISCUSSION**

Most of the respondents were between 24 to 29 years old (52.9%), female (59.2%), single (85.8%), college graduate (67.5%), and belonged to the low-income bracket (91.7%) (Table 1).

Table 1  
Profile of call center workers and their level of knowledge on HIV/AIDS in Cebu City (n=289)

Parameter		Knowledge Level				Σ	
		Low	Average	High	Very High	f	%
<b>Age category (years)</b>	18-23	0	7	41	33	81	28.0
	24-29	1	7	41	104	153	52.9
	30-35	0	2	11	35	48	16.6
	36 and above	0	0	2	5	7	2.4
<b>Gender</b>	Female	0	9	70	92	171	59.2
	Male	1	7	25	85	118	40.8
<b>Civil Status</b>	Single	1	15	83	149	248	85.8
	Married	0	1	12	28	41	14.2
<b>Educational Attainment</b>	Undergraduate	1	8	34	42	85	29.4
	College graduate	0	8	55	132	195	67.5
	Post graduate	0	0	4	3	7	2.4
	Vocational	0	0	2	0	2	0.7
<b>Income Level</b>	Poor	0	0	0	1	1	0.3
	Low income	1	16	84	164	265	91.7
	Lower middle income	0	0	10	12	22	7.6
	Middle class	0	0	1	0	1	0.3

The findings on income were similar to that of Melgar, Ofreneo, and Kintanar (2009) and Kabamalan

et al. (2010) where most call center agents were earning above the poor category. Melgar et al. (2009) also showed that majority of the call center agents were single or unmarried. The call center work seems to appeal the younger class. Given the stress and the modified working time, the younger class are perhaps better able to cope up with this type of arrangement. On the other hand, it is not surprising to find more females as the Filipino population is mostly female.

The mean knowledge score was found to be 14.87 (very high) (SD = 2.5; range = 7 – 19), with more than majority always getting the correct answers (Table 2).

Table 2  
Respondents' knowledge on HIV/AIDS (n = 289)

Knowledge Items	Yes		No	
	f	%	f	%
1 AIDS is a contagious disease	<b>258</b>	89.3	31	10.7
2 AIDS is a hereditary disease	81	28.0	<b>208</b>	72.0
3 A person infected with HIV does not usually show any symptoms of the disease	<b>215</b>	74.4	74	25.6
4 Resistance to other diseases in an individual with AIDS is rather low	<b>189</b>	65.4	100	34.6
5 There is a vaccine for AIDS	91	31.5	<b>198</b>	68.5
6 The appearance of HIV carriers are different from normal population	123	42.6	<b>166</b>	57.4
7 HIV/AIDS can be contacted through: Sharing public toilets and swimming pools with an infected person	63	21.8	<b>226</b>	78.2
8 Using an infected person's belongings such as clothes, comb, and towel	47	16.3	<b>242</b>	83.7
9 Touching an infected person, such as hugging, and shaking hands	30	10.4	<b>259</b>	89.6
10 Sharing the food utensils of an infected person	115	39.8	<b>174</b>	60.2
11 Exposure to an infected person who coughs or sneezes	117	40.5	<b>172</b>	59.5
12 Having a tattoo done with the same devices after an infected person	<b>272</b>	94.1	17	5.9
13 The bite of a mosquito	96	33.2	<b>193</b>	66.8
14 Sharing injection needles with an infected person	<b>274</b>	94.8	15	5.2
15 Having a tooth extracted with the same devices after an infected person	<b>238</b>	82.4	51	17.6
16 An infected pregnant woman infecting her unborn child	<b>255</b>	88.2	34	11.8
17 Having sex with an infected person	<b>280</b>	96.9	9	3.1
18 Receiving blood from an infected person	<b>281</b>	97.2	8	2.8
19 The breast milk of an infected person	<b>230</b>	79.6	59	20.4

Note: Correct responses set in bold

This finding is similar to that of Melgar et al. (2009) where a high level of awareness on AIDS and sexually transmitted infections (STIs) among call center agents was also seen, and contrary to a previous study which implied that some call center agents may have low knowledge level (Melgar, Bangi, Mandel, & McFarlan 2012). The high level of knowledge observed in the present may be attributed to the profile of the respondents who should be at least at the college level, which implies that most were able to get a proper education (Holmqvist, 2009). HIV/AIDS may be a fairly common topic discussed in several subjects in college.

Majority of the respondents knew that AIDS is a contagious [258 (89.3%)] and hereditary [208 (72%)]

disease. Most were also aware that a person with HIV/AIDS is asymptomatic for the disease [215(74%)], that resistance to other diseases in an individual with AIDS is rather low [189 (65.4%)], and that the appearance of HIV carriers is not different from the normal population [166 (57.4%)]. Surprisingly, only 198 (68.5%) were aware that there is no vaccine for AIDS. The lowest number of correct answers came from the items which stated “the appearance of HIV carriers is different from normal population” (57.4%) and “HIV/AIDS can be contacted through exposure to an infected person who coughs or sneezes” (59.5%). These results imply that respondents’ knowledge retention about HIV/AIDS varies or that they may not have been properly educated about it, which can lead to misconceptions. Misconceptions about the disease have been reported in the young population. The disease has been linked to several beliefs, including “AIDS as a punishment from God for people who have sexual intercourse outside of marriage”, “only those with multiple sexual partners are at risk of infection”, and “disease is curable” (Laguna, 2004).

For the profile, age was found to be consistently positively correlated with knowledge scores (r = 0.25, n = 298, p-value = 0.000) or knowledge level (rs (296) = 0.255; p-value = 0.000). Further analysis revealed that knowledge scores were also found highly significantly different between age groups (Table 3), specifically

Table 3  
Correlation of respondent's profile with HIV/AIDS knowledge score

Parameter	P value
Age <sup>a</sup>	0.001**
Gender <sup>b</sup>	0.142
Civil status <sup>b</sup>	0.071
Educational attainment <sup>a</sup>	0.001**
Income level <sup>a</sup>	0.988

<sup>a</sup>ANOVA <sup>b</sup>Independent t-test \*\*Highly significant

between the categories 18 to 23, 24 to 29, and 30 to 35 years old. Results imply that those who are 23 years old and below may need further enhancement to improve their knowledge on HIV/AIDS. This age range is within the bracket (15-24 yrs old) that accounted for 27% of the reported HIV/AIDS cases from 1984 to 2016 (NHSS, 2016). Regardless of gender, the age group with the biggest proportion of cases has become younger within the last decade. From 2001 to 2005, it was 35 to 49 years, and from 2011 to 2016, it was 20 to 29 years. Montenegro (2011) pointed out that with the increasing number of HIV cases among Filipino adolescents, the youth need to be educated on sexual and reproductive health to protect them from teen pregnancy, risky sexual behavior, STIs (sexually

transmitted infection) and HIV. Aside from the lack of proper education, the youth also poses higher risk of acquiring HIV because of: (a) peer pressure; (b) the limited opportunities to learn about preventing HIV infection; and (c) the lack of skills to communicate with health needs. Adolescents also have very little or no access to sexual and reproductive health services (Montenegro, 2011). On the other hand, as NHSS (2016) reported that majority of the total reported HIV/AIDS cases were from the 25 – 34 year age group, educating the community about HIV/AIDS at all age groups is essential to avoid misconceptions.

While this study has shown that HIV/AIDS knowledge level increased with age, older individuals may also be more likely to engage in high-risk behaviors. Individuals may be well educated or informed but would still choose to engage or practice risky behaviors. Among these behaviours include the non- or less frequent usage of condoms. Corneille, Zyzniewski, and Belgrave (2008) reported that older participants used condoms less frequently. However, it is also possible that individuals with a lower level of educational attainment are more likely to engage in high-risk behaviors compared to those with a higher level of education (Hansain, Levy, Mensah, & Sinacore, 2007). Contrary to the findings of Okeke, Onwasigwe, and Ibegbu (2012), no significant differences on the risk-related behavior variables between those below 30 years of age and those 30 years and older were observed.

Educational attainment was also found to be consistently positively correlated with knowledge level ( $r_s(296) = 0.136$ ;  $p\text{-value} = 0.021$ ), and significantly different between groups (Table 3), specifically between undergraduate and college graduate level (posthoc analysis results not shown). Individuals with higher education levels, especially those with a university or college education, have been shown to have higher knowledge level compared to those with lower education levels (Ayranci, 2005). Laguna (2004) showed that a higher proportion of males who are at high risk of contracting HIV/AIDS are those below tertiary education. In another study (Solomon, Smith, & Del Rio, 2008) conducted among commercial sex workers (CSWs), results showed that low educational level might predispose CSWs to STIs and associated risk factors. Most CSWs with lower educational levels were disproportionately infected with STIs and were practicing high-risk behaviors. The results further imply that higher education attainment can tantamount to better knowledge level about HIV/AIDS, probably because individuals would get more exposure to health educational programs as they study further. De

Walque (2007) showed that the risk of acquiring HIV is reduced among young individuals who receive proper education as they are more responsive to HIV/AIDS information campaigns. Hence, education must be given the highest priority in combating HIV/AIDS (Mwamwenda, 2014).

For the other profile parameters, no significant differences were seen in the knowledge scores of the respondents when they were grouped according to civil status, gender, and income. It appears that married or single persons may have same knowledge level, but their behaviors may be different as married people were seen to have a positive impact on health behaviors and other related attitudes (Stein, Nyamathi, Ullman, & Bentler, 2007). Gupta (2000) found gender and sexuality to be significant factors in the sexual transmission of HIV as they influence the standards of treatment, care, and support. However, it is mainly biological and cultural factors that make women more vulnerable to HIV than men and not their lack of knowledge (Gupta, 2000; Türmen, 2003; Temah, 2007). Temah (2007) also found out that although the socioeconomic status, health behavior and HIV have relationships, the level of knowledge was not significantly associated (Temah, 2007).

Aside from the average income and education in the society, women's health is also affected by the distribution of wealth and education across sexes (Temah, 2007). Low income increases the likelihood of an individual to engage in risky situations, including multiple sexual exposures, for financial gain (Ogunmola, Oladosu, & Olamoyegun, 2014). Poor people are more likely to engage in transactional sex, with richer people entering the transactional sex market as buyers (Holmqvist, 2009). In many societies, women have a lower social and economic status simply because they are women. With their lower socio-economic status, they may willingly initiate sexual relationships with older men for material benefit. Also, a woman's lower status can leave her more exposed to infection, while men risk infection because of ideals of masculinity associated with risk-taking and sexual conquest. Man's social norms reinforce their lack of understanding of health issues and at the same time celebrate promiscuity, making them more vulnerable to HIV infection (Türmen, 2003).

#### IV. CONCLUSION

HIV/AIDS prevention programs have been linked to increasing knowledge level to vulnerable populations. In this study, age and educational attainment correlated with the knowledge level of HIV/AIDS among call center

workers. Results implied that those who are younger (below 24 years old) and have not graduated from college should be targeted for knowledge enhancement on HIV/AIDS. Although essential, knowledge alone may not be sufficient to control the spread of disease. It must be partnered with the willingness of the population-at-risk to change their attitude and lifestyle to make prevention effective (Laguna, 2004; Fuller & Chamrathirong, 2008).

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