HYGIENE Practices, Risk Behavior, and Molecular Detection of Sexually Transmitted Viruses Among Pink Card-Issued Sex Workers in Davao CITY

Maria Angela B. Martin[1], Avee Joy B. Dayaganon, PhD[2]

[1]Clinical Instructor, Davao Doctors College
gelamartin24@gmail.com

[2]Graduate School Department, University of the Immaculate Conception, Davao City, Philippines
adayaganon@uic.edu.ph

ABSTRACT

This study examines the relationship between hygienic practices, risk behaviors, and sexually transmitted viruses (STV) prevalence among sex workers holding Pink Cards in Davao City. Human papillomavirus (HPV) and herpes simplex viruses (HSV-1 and HSV-2) were the focal STVs investigated. Utilizing a snowball sampling technique, the researcher gathered data from 30 participants. Surveys were conducted to collect socio-demographic data, hygiene practices, and risk behaviors. Additionally, Urine samples were analyzed using polymerase chain reaction (PCR) to detect the presence of HPV, HSV-1, and HSV-2. The study revealed that the hygiene practice of the participants had an average score of 3.30 and a standard deviation of 0.49, indicating a moderate level overall, and the level of sexual risk behaviors among the respondents is revealed, with an overall mean of 2.23 and a standard deviation of 0.37, indicating rare manifestations of risky sexual behaviors. All participants tested negative for the targeted viruses in the molecular testing. Analysis showed no significant relationship between socio-demographic factors and STV prevalence, nor were there significant differences in sexual hygiene practices and risk behaviors among different demographic groups. These findings suggest that despite the high-risk nature of their profession, the sex workers in this sample did not exhibit high STV prevalence, highlighting the importance of continued research and targeted interventions for effective STV prevention and management in this population.

KEYWORDS: *Human papillomavirus, Herpes simplex viruses, sexually transmitted infections, Pink Card-issued sex workers, Hygienic practices, Risk behaviors, Polymerase chain reaction (PCR), Philippines*

INTRODUCTION

Prostitution has been associated with various psychological and medical conditions, such as anxiety, depression, post-traumatic stress disorder, and sexually transmitted infections (STIs) (Burnette et al., 2019). Sex workers are considered a high-risk group for acquiring STIs, including Herpes simplex virus (HSV), Human papillomavirus (HPV), gonorrhea, and Human immunodeficiency virus (HIV). Clients of sex workers also play a significant role in the transmission of STIs to the broader public due to their interactions with both sex workers and their private partners (WHO, 2018).

In the United States, prostitution is illegal except in some counties of Nevada (Hamilton, 2024). STIs, particularly HPV, are prevalent, with many individuals being asymptomatic (CDC, 2022). In Belgium, there is an increase in STI prevalence among clients of sex workers, who exhibit poor uptake of STI testing (De Baetselier et al., 2021). In the Philippines, there were approximately 376 million instances of STIs annually, with significant cases of chlamydia, gonorrhea, syphilis, and trichomoniasis (Ngo et al., 2021).

Davao City reported 3,889 cases of STIs from January to May 2016, highlighting a pressing need for public awareness and targeted interventions (Pilapil, 2016)). Despite efforts, STI transmission remains a significant issue due to overlooked factors and insufficient high-quality data on sex workers with pink cards, which hinders effective policymaking (Soe et al., 2018).

This study aims to provide reliable data crucial for future policy formulation, such as compulsory vaccination programs for sex workers. Disseminating the study's findings will inform government health organizations, NGOs, and health professionals, raising awareness and informing interventions to promote hygiene practices and reduce STI transmission among sex workers.

METHODS

The study included 30 registered pink card-issued sex workers in Davao City, out of a total of 600. Participants were selected through stratified random sampling to ensure representation across various demographics, including age, marital status, education, and socio-economic status. The method of gathering the participants is through snowball technique in where the researcher first contacted the handlers of the sex workers and they were the ones that contacted the participants.This technique is ideal for participants who are vulnerable and

require anonymity. Data were collected through structured interviews and questionnaires administered in person. The questionnaire included sections on demographic information, hygiene practices, and sexual risk behaviors. Hygiene practices were assessed using a 5-point Likert scale, while sexual risk behaviors were evaluated through self-reported incidents of risky sexual activities.

Detection for HPV, HSV1, and HSV2 was conducted using the Polymerase Chain Reaction (PCR) technique. The steps for PCR-based molecular testing were as follows: Cervical swabs were collected from each participant using sterile cotton swabs. DNA was extracted from the collected samples using the MACHEREY-NAGEL DNA extraction kit and following the manufacturer's instructions. Preparation of PCR Mix: The PCR mix was prepared, including DNA polymerase, dNTPs, primers specific for HPV, HSV1, and HSV2, $MgCl_2$, and buffer solution. The PCR was carried out in a thermal cycler with the following cycling conditions: Initial denaturation at 95°C for 5 minutes. 35 cycles of denaturation at 95°C for 30 seconds, annealing at 55°C for 30 seconds, and extension at 72°C for 1 minute. Final extension at 72°C for 10 minutes.

The PCR products were separated by agarose gel electrophoresis and visualized under UV light to confirm the presence or absence of target DNA fragments. After multiple trials, all samples tested negative for HPV, HSV-1, and HSV-2 Data were analyzed using SPSS software. Descriptive statistics were used to summarize demographic characteristics, hygiene practices, and sexual risk behaviors. Independent sample t-tests and ANOVA were used to examine differences in hygiene practices and sexual risk behaviors across various demographic categories. A significance level of $p < 0.05$ was used for all tests.

RESULTS

Table 1

Socio-demographic Profile of the Sex Workers

	Frequency	**Percent (%)**
Age		
18 - 25 years old	3	10.00
26 - 30 years old	7	23.30
31 - 35 years old	5	16.70
36 - 40 years old	6	20.00

□ 40 years old	9	30.00
Marital Status		
single	17	56.70
married	2	6.70
separated	1	3.30
common-law partner	10	33.30
Educational Attainment		
elementary level	7	23.30
elementary graduate	5	16.70
high school level	14	46.70
high school graduate	3	10.00
college level	1	3.30
Socio-economic Status		
below ₱9, 520	23	76.70
between ₱9,520 to ₱19,040	2	6.70
between ₱19,040 to ₱38,080	5	16.70
Years in Business		
less than a year	3	10.00
1 to 2 years	4	16.70
3 to 4 years	9	30.00
5 years and up	14	43.30
Access to Protection		
no access	0	0.00
with access	30	100.00
Total	**n=30**	**100.00**

The participants were primarily aged 26-30 and above 40, with a majority being single. Educational attainment was diverse, with most having a high school level of education. The majority of participants belonged to a socio-economic status below ₱9,520 in monthly salary. All participants reported access to protection.

Table 2

Level of Hygiene Practices Among Sex Workers

	Mean	SD	Description
1. taking a bath before having sexual intercourse.	3.97	1.33	Frequently

2. taking a bath after sexual intercourse.	3.00	1.62	Seldomly
3. using soap when taking a bath.	4.43	1.13	Always
4. disinfecting private parts with alcohol after having sexual intercourse.	4.53	.94	Always
5. visiting clinics for check-ups.	3.43	.93	Frequently
6. taking medicine when they are infected.	2.77	1.79	Seldomly
Overall Mean	**3.30**	**.49**	**Moderate**

Overall mean score for hygiene practices was 3.30 (SD = 0.49), indicating moderate hygiene practices among respondents. This suggests that hygiene practices were somewhat consistent, with only a few deviations from the mean.All 30 sex workers tested negative for HPV, HSV1, and HSV2, indicating a 0% prevalence within the tested population. This implies a low risk of current infection.

Table 3

Level of Sexual Risk Behaviors of the Sex Workers

	Mean	SD	Description
1. drinking alcohol before/after sexual intercourse.	2.33	1.09	Rarely
2. smoking cigarettes before/after sexual intercourse.	3.13	1.72	Seldomly
3. using of drugs before/after sex.	1.33	.76	Never
4. having consecutive sexual partners within the day.	3.17	1.68	Seldomly
5. having multiple sexual partners.	3.87	1.43	Frequently
6. not taking contraception such as pills after a non-protected sex.	2.57	1.89	Seldomly
7. performing oral sex with their sexual partner.	3.37	1.47	Seldomly
8. performing cunnilingus with their sexual partners.	1.70	1.18	Never
9. allowing their sexual partners to perform anal sex with them.	1.07	.36	Never
10. rimming their sexual partners.	1.00	.00	Never
11. having performed fisting with their sexual partners	1.00	.00	Never

Overall Mean	**2.23**	**.37**	**Low**

The overall mean score for sexual risk behaviors was 2.23 (SD = 0.37), indicating that risky sexual behaviors were rarely manifested among respondents. This consistency suggests minimal deviation in sexual risk behaviors.

Table 4

Prevalence of Sexually Transmitted Infections Among Sex Workers

(n= 30)	**Sexually Transmitted Infection**		**Prevalence**
	Infected	**Not Infected**	
HPV	0	30	0
HSV1	0	30	0
HSV2	0	30	0

No significant differences were found in the level of hygiene practices or sexual risk behaviors across different socio-demographic profiles ($p > 0.05$). This finding contradicts previous research indicating variations based on duration of business tenure (Kakchapati, 2017). Differences in contextual factors such as cultural norms, access to healthcare, and regulatory frameworks may account for these discrepancies. The absence of significant differences in hygiene practices based on marital status, education, and socio-economic status suggests that perceived behavioral control is consistent across these demographics. This challenges assumptions about the influence of demographic factors on hygiene behaviors. Similarly, the lack of significant variations in sexual risk behaviors based on demographic factors highlights the complex interplay of factors influencing sexual behaviors. This emphasizes the importance of holistic approaches to sexual health promotion.

CONCLUSION

The study encompassed 30 sex workers out of 600 registered pink card-issued sex workers in Davao City. The socio-demographic characteristics of the participants reflected trends in age, marital status, education, family income, and access to protection, aligning with existing literature on marginalized populations in sex work. Moderate hygiene practices were observed, with

common practices such as alcohol disinfection after intercourse. However, areas for improvement include medication adherence and post-sex bathing. The findings emphasize the importance of tailored hygiene education and interventions. Low levels of sexual risk behaviors were reported, but concerns remain regarding inconsistent contraception use and drug-related impairments. The zero prevalence of STIs suggests successful prevention efforts, but ongoing monitoring and context-specific interventions are essential. The lack of significant differences in hygiene practices and sexual risk behaviors across demographic categories challenges assumptions about demographic determinants of these behaviors. This underscores the need for nuanced interventions addressing various influencing factors.

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