

Clinic appointment attendance for sexually transmitted infection screening among Filipina sex workers: A multilevel analysis

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Abstract

This study evaluates putative individual- and contextual-level social risk factors that may influence the likelihood that Filipina female sex workers (FSWs) attend and utilize health services for STI screening. Face-to-face interviews were conducted with 1004 FSWs and their 86 employers. Research staff also collected clinic appointment attendance data. Hierarchical linear modelling was used to estimate the simultaneous effects of individual- and workplace-level factors. Results showed that both individual- and contextual-level characteristics were associated with STI screening appointment attendance. Individual characteristics found to have significant effects on clinic attendance included occupation, income, length of work and commercial sex involvement. City of establishment was a workplace characteristic significantly associated with appointment attendance. In addition to cross-level interactions, the impact of individual-level occupation depended upon characteristics of the workplace. These findings suggest that individual health service utilization is contingent upon contextual-level risk factors in the workplace. Intervention implications aimed at increasing clinic attendance are discussed.

Introduction

Regular screening for sexually transmitted infections (STIs) and HIV has been shown to be an effective strategy for early detection and control of these diseases in the commercial sex context at the national level (Hananberg & Rojanapithayakorn, 1998; Steen & Dallabetta, 2003). This type of sexual health service has successfully sustained low and stable HIV seroprevalence among female sex workers (FSWs) in Senegal (Meda et al., 1999), Cote d'Ivoire (Ghys et al., 2002) and Benin (Alary et al., 2002).

The Philippines has witnessed relatively low rates of HIV and continues to be classified as a 'low level' area (Ghys et al., 2001; Mateo et al., 2004; UN-AIDS, 2004, 2006). Even among highest HIV-risk groups such as FSWs, the aggregate HIV prevalence rates ranged from 0.3–1% in 2003 (Philippine Health Department, 2003). Government-sponsored social hygiene clinic (SHC) for registered and freelance FSWs is strongly linked to low seroprevalence. The government initiated regulations, particularly regarding employing female hospitality workers in entertainment-based establishments. These Filipina

workers, officially labeled as 'guest relation officers' but, in truth, are dancers, massage parlour attendants and entertainers or hospitality girls, were required to attend an SHC and undergo free routine STI examinations (Tiglaio et al., 1996). Individual clinic appointment attendance is an essential element in maintaining the effectiveness of such a screening program.

Increasingly, HIV/AIDS research has emphasized environmental influence on individual preventive behaviour in the commercial sex context (Bloom et al., 2002; Hannan & Freeman, 1977; Kerrigan et al., 2003; Logan et al., 2002; Morisky et al., 2002, 2006). However, how work conditions may effect FSWs' clinic attendance has been understudied. Building upon an expanded Andersen's model (Andersen, 1995; Gelbert et al., 2000; Smith & Kirking, 1999), the present study examined individual-level and contextual-level factors, including potential interactions between characteristics of the individual and the workplace. We hypothesized that the FSW relationship to her work establishment is associated with utilizing sexual health services.

Methods

The present study used data that were collected as part of a large-scale participatory survey of establishment-based sex workers on four islands (Legaspi, Cebu, Cagayan de Oro and Ilo-Ilo) of the southern Philippines (Tiglaio et al., 1996). Three data sets from this large project were used: survey data from FSWs, survey data from their employers and medical records of FSWs' from SHCs collected during October 1994 through May 1995.

Clinic appointment attendance was the dependent variable that measured likelihood of utilizing sexual health services. For our purposes, utilizing sexual health services was operationalised as the rate of attended appointments for STI screening. To adjust for period of time that a FSW was unable to keep appointments because of various factors such as an STI diagnosis, two elements were included in the average appointment attended rate (R). We first calculated monthly appointment attendance rate, r_j , defined as the actual number of visits divided by number of scheduled visits for the j th month. The person-weeks variable provided information about whether a FSW was active at work (I_j) (Tiglaio et al., 1996). The outcome behaviour was computed as $R = (\sum r_j * I_j) / \sum I_j$. The clinic appointment attendance ranged from 0–1.

We used hierarchical linear models (HLMs) (Bryk & Raudenbush, 1992) that elaborated and progressively adjusted the significance of individual occupation on appointment attendance. The analyses first elaborated occupation categories to

investigate the association between occupation and outcome behaviour. Next, the model added other work-related and sociodemographic characteristics to test for possible confounding of occupation and appointment attendance. Lastly, we included workplace explanatory variables to determine whether establishments accounted for variation in appointment attendance. Sexually active individuals eligible for analysis were employed at establishments ($N = 1183$). Exclusion of the single worker of an establishment yielded a total of 1004 women at 86 establishments, in workplace clusters ranging from 2–41.

Results

Table I summarizes individual-level characteristics stratified by occupation. The average number of years of schooling was very similar to the average year for the total sample, but other characteristics differed markedly among the occupation groups. For instance, massage parlour women (masahistas) were oldest among occupation groups; and four-fifths of massage parlour attendants had a child, compared to less than two-thirds of 'other' workers and about half of the entertainers or dancers. More than 70% of entertainers and 'other' occupations had no regular partner, comparable to massage parlour attendants (67%) and dancers (62%).

Table II presents HLM models that sequentially elaborate the relationship between occupation and clinic appointment attendance. The null model revealed that almost 60% of the variance of

Table I. Sample profile of study population (mean [SD] or percentage).

Explanatory variables	Total <i>N</i> = 1,004	Entertainer <i>N</i> = 459	Dancer <i>N</i> = 282	Masahista <i>N</i> = 180	Other <i>N</i> = 83
Sociodemographics					
Age (years)	23.20 (4.67)	23.23 (4.58)	21.18 (3.01)	26.38 (5.58)	23.01 (3.78)
Education (years)	9.07 (2.16)	9.05 (2.31)	8.87 (1.80)	9.31 (2.13)	9.35 (2.42)
No regular partner (%)	69.22	73.64	62.41	66.67	73.49
Having no child (%)	42.03	46.19	51.06	20.00	36.14
Sex work-related characteristics					
Weekly wage in pesos (%)					
Less than 500	26.20	30.50	16.31	27.22	33.73
500–1000	20.42	28.76	17.02	5.56	18.07
1000–1500	25.20	21.79	31.56	27.22	18.07
1500+	28.19	18.95	35.11	40.00	30.12
Work duration in months (%)					
Less than 3	30.48	32.90	33.33	16.67	37.35
3–6	24.80	26.80	27.30	16.11	24.10
7–12	24.10	25.05	22.70	25.00	21.69
12+	20.62	15.25	16.67	42.22	16.87
Commercial sex involvement (%)					
No	41.73	55.12	27.66	12.22	79.52
Involved with local clients only	35.36	37.69	31.91	47.22	8.43
Involved with foreign clients	22.91	7.19	40.43	40.56	12.05
Clinic appointment attended	0.50 (0.34)	0.32 (0.33)	0.61 (0.27)	0.77 (0.24)	0.55 (0.24)

Table II. Results of multilevel modelling of clinic appointment attended.

	β (SE)				
	Null model	Model 1	Model 2 [†]	Model 3	Model 4
<i>N</i>	1004	1004	1004	1004	1004
Individual-level variables					
Self-identified occupation ^a					
Entertainer		-0.29 (0.05)***	-0.26 (0.05)***	-0.21 (0.05)***	-0.28 (0.05)***
Dancer		-0.13 (0.04)**	-0.11 (0.04)**	-0.09 (0.04)*	-0.09 (0.04)*
Other		-0.19 (0.05)***	-0.15(0.05)**	-0.08 (0.05)	-0.06 (0.05)
Weekly wage in pesos ^b					
500–1,000			-0.06 (0.02)*	-0.06 (0.03)*	-0.06 (0.03)*
1,000–1,500			-0.04 (0.03)	-0.04 (0.03)	-0.04 (0.03)
1,500+			-0.04 (0.03)	-0.05 (0.03)	-0.05 (0.03)
Work duration in months ^c					
3–6			0.04 (0.02)	0.04 (0.02)	0.03 (0.02)
7–12			0.04 (0.02)*	0.04 (0.02)*	0.04 (0.02)
12+			0.07 (0.02)**	0.07 (0.02)**	0.07 (0.02)**
Commercial sex involvement ^d					
No			-0.07 (0.03)*	-0.08 (0.03)*	-0.08 (0.03)*
Involved with foreign clients			0.03 (0.02)	0.03 (0.02)	0.04 (0.02)
Interaction terms					
No commercial sex × wage 500–1,000			0.10 (0.04)*	0.11 (0.04)*	0.10 (0.04)*
No commercial sex × wage 1,000–1,500			0.06 (0.04)	0.07 (0.04)	0.06 (0.04)
No commercial sex × wage 1,500+			0.09 (0.05)	0.10 (0.04)*	0.09 (0.05)*
Intercept	0.46 (0.03)***	0.69 (0.04)***	0.67 (0.04)***	0.54 (0.06)***	0.59 (0.06)***
Workplace-level variables					
City ^e					
Cebu				0.09 (0.05)	0.04 (0.06)
Cagayan de Oro				0.13 (0.05)*	0.08 (0.06)
Ilo-Ilo				0.32 (0.07)***	0.28 (0.07)***
Years of business				0.003 (0.003)	0.002 (0.003)
Cross-level interaction					
Entertainer × Cebu					0.23 (0.06)***
Entertainer × years of business					0.02 (0.01)*
Random variance component					
σ_c^2	0.05 (0.002)***	0.05 (0.002)***	0.05 (0.002)***	0.05 (0.002)***	0.05 (0.002)***
σ_{u0}^2	0.07 (0.01)***	0.02 (0.01)***	0.02 (0.01)***	0.01 (0.005)*	0.008 (0.004)*
σ_{u1}^2		0.02 (0.01)*	0.02 (0.01)*	0.02 (0.01)*	0.02 (0.01)*
σ_{u01}		0.02 (0.005)***	0.02 (0.005)***	0.02 (0.004)***	0.01 (0.005)**
Comparison to previous model					
Chi-square		38.51***	23.23*	22.80***	12.99***
Degrees of freedom		5	11	4	2

* $p \leq 0.05$; ** $p < 0.01$; *** $p < 0.001$.

^aReference group: Masahista women; ^bReference group: less than 500 pesos per week; ^cReference group: less than 3 months; ^dReference group: involved with local clients only; ^eReference group: Legaspi city.

[†]We adjusted sociodemographics (age, level of educational attainment, partner status, and parity) for Model 2 and found this model basically revealed no appreciable differences from Model 2, and resulted in no significant improvement in fit over Model 2 (no shown here). Since sociodemographics had no significant association with clinic attendance, these variables were not included in subsequent models.

appointment attendance rate was at the workplace level ($p < 0.001$). Model 1 adds random slopes for occupation. The β coefficients for entertainer, dancer and ‘other’ were significantly negative, indicating that these women attended clinic

appointments for STI screening, on average, less frequently than massage parlour women.

Model 2 adds other sex work-related characteristics. Compared to Model 1, the coefficients for working as an entertainer, dancer or ‘other’

diminished by about 10–20%, indicating some occupation effects are redundant with other sex work-related characteristics. The results also show that women who had lower wages but were not involved in commercial sex tended to attend clinic examinations more frequently than those FSWs with higher wages. Moreover, the effect of one was significantly contingent upon the other. In addition, length of sex work is positively related to frequency of clinic attendance.

Model 3 adds main effects of the two workplace-level variables: city and years of business. Women working in Cagayan de Oro or Ilo-Ilo attended clinic appointments most frequently, whereas women working in Legaspi city were least likely to attend among FSWs in the four cities. Coefficients for occupation greatly decreased, indicating that a portion of their previous effects was explained by workplace-level variables. In Model 4 the cross-level interactions between workplace-level variables and entertainer at the individual-level are included. Entertainers who worked in Cebu city attended clinic examinations much more frequently than non-entertainer women working in other cities. In addition, entertainers employed at long-established workplaces attended clinic appointments much more frequently than FSWs employed at newly-established workplaces.

Discussion

This study supports the current preventive medicine and public health literature, which suggests that multiple factors influence decision-making regarding utilizing health services. Our findings also support the Andersen Model in that occupation is a significant determinant of clinic appointment attendance. Entertainers more frequently missed their scheduled appointments than other occupation groups. Although the entertainers in the Philippines are labelled as ‘guest relation officers’ rather than ‘prostitutes’, their occupation is widely recognized as sex work (Sobrevega & Sanchez, 1996). While it may be unrealistic to suggest that stigmatized sex work such as that engaged in by the ‘entertainers’ be eradicated in the name of public health and controlling the spread of HIV, it is feasible to support women working in this sex work-related industry by encouraging, promoting and requiring regular clinic examination. Such efforts may promote the sexual health of FSWs as well as help to alleviate some of the social distancing FSWs have experienced as a result of what their perceived diminished status as women and increased occupation-related vulnerability to STI/HIV (Steen & Dallabetta, 2003).

Our findings supported previous studies regarding the importance of workplace contexts on health

service utilization (Gysels et al., 2002; Sedyaning-sih-Mamahit, 1999). Female sex workers who work in Ilo-Ilo had the best attendance for STI examinations. As previous studies suggest (Reif et al., 2005; Rogers et al., 2002), geography can affect variables related to FSWs including establishment manager attitudes, beliefs, values and relative status and the development of infrastructure related to service utilization. This is also true for the Philippines. According to qualitative evidence available from other phases of the data collection procedures but not reported here, managers in Ilo-Ilo had more supportive attitudes regarding safe health practices and paid greater attention to the worker infections than those in other geographical areas. This further suggests the importance of developing management associations or organizations that can address and reinforce issues of clinic registration, monitoring and imposition of fines for non-compliance.

It is noteworthy that the impact of individual-level occupation on attending clinic appointments appears contingent on workplace characteristics. These cross-level interactions highlight the concept of person-environment fit. Entertainers were most likely to work in karaoke TV centres, a relatively new type of establishment that became popular in the early 90s. This may explain the significant increase in clinic attendance rate for establishments being in operation for more than three years. Dancer, massage parlour attendant and receptionist are more traditional occupations and consequently have a longer-established tradition of manager involvement in encouraging clinic attendance, implying strategies or interventions for improving clinic appointment attendance among FSWs should consider individual and contextual factors. Clearly, the use of integrated intervention strategies will facilitate and reinforce protective sexual health-related behaviours and reduce STI- and HIV-related vulnerability among FSWs.

Lastly, our findings should be interpreted within the context of the study’s limitations. We examined the association of individual- and context-level factors with FSW health service utilization behaviour knowing of the endogeneity problem. Female sex workers may not be randomly allocated to workplaces owing to various reasons such as specific workplace attributes and an FSW’s own characteristics (Sedyaningsih-Mamahit, 1999). Sex industry recruitment may also be due to social networks or specific workplace characteristics. When these factors are not completely taken into account, the allocation to workplaces may upwardly bias the size of workplace context effects. Cross-sectional data analyses cannot disentangle or establish causal links suggested herein. However, this theory-based

study using the multilevel analytical approach provides important insights, identifying significant determinants of clinic attendance at individual and workplace levels.

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