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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 Filipina sex workers (FSWs) attend and utilize health services for STI screening. Face-to-face interviews were conducted with 1,004 FSWs and their 86 employers. Research staff also collected clinic appointment attendance data. Hierarchical linear modeling 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.

Keywords

Clinic appointment attendance; sexually transmitted infection screening; female sex workers; multilevel analysis; the Philippines

INTRODUCTION

The highest, at-risk group for exposure to HIV in developing countries has been identified as female sex workers (UNAIDS, 2003). While increasing percentages of such workers in the Asian sex industry are now employed in a variety of establishments (Hananberg &

Rojanapithayakorn, 1998; WHO, 2002), their health behaviors related to sexually transmitted infections (STIs) and HIV have not been widely studied. To understand their health behaviors, and in particular their likelihood of keeping clinic appointments, it is necessary to examine how their workplace, and society in general, interact with variables such as work-related knowledge, profits/benefits to workers and employers, time frame, territory and other labor/management issues. Such understanding will also involve examination of the internal relationships between workers and employers and external relationships with community agencies such as police, hotels, health care providers and government officials.

Although most research has focused on promoting individual condom use, regular screening for STIs and HIV has been shown to be an effective strategy for early detection and control of these diseases in the commercial sex context (Steen & Dallabetta, 2003). For instance, this type of sexual health service successfully sustained low and stable HIV seroprevalence among female sex workers in Senegal (Meda *et al.*, 1999), Cote d'Ivoire (Ghys *et al.*, 2002), and Benin (Alary *et al.*, 2002). Another example occurred in the Philippines where the government initiated regulations, particularly with respect to the employment of female hospitality workers in entertainment-based establishments. These Filipina workers, officially labeled as guest relation officers but, in truth, dancers, massage parlor attendants and entertainers or hospitality girls, were required to attend a Social Hygiene Clinic (SHC) and undergo free STI examinations on a routine basis (Tiglao *et al.*, 1996). Individual clinic appointment attendance is an essential element in maintaining the effectiveness of such a screening program.

The revised and expanded Andersen Behavioral Model for Vulnerable Populations provided a strong theoretical orientation for the present investigation because it has examined the relationships between individual, structural and process characteristics in relation to healthcare utilization (Andersen, 1995; Andersen *et al.*, 2000; Smith & Kirking, 1999; Gelbert *et al.*, 2000). With its emphasis on vulnerable domains such as social structure and enabling resources, this model draws attention to the importance of predisposing, enabling and need factors in the prediction of personal health practices. For the circumstance under investigation herein, attendance by FSWs at a regular screening program is thus attributable to factors that predispose and enable such individuals to seek out such screenings within the context of the surrounding external environment. These predisposing characteristics include demographic factors and social structure factors. For instance, younger groups have been found to miss significantly more appointments than their older counterparts (Andersen *et al.*, 2000; Israelski *et al.*, 2001). Social structure measures related to occupation and education determine the status of a person in a particular community; and female sex workers have reported that lower societal status, resulting from their occupation, contributes to their health behavior patterns relative to their sexual circumstance (Gysels *et al.*, 2002). There is also a significant association between FSW health behavior and financial remuneration for commercial sex involvement (Sedyaningsih-Mamahit, 1999; Sobrevega & Sanchez, 1996). Of particular concern is the interaction effect of income and commercial sex engagement on health behavior. We hypothesized the income differences in attending clinic appointment for STI screening and that commercial sex engagement may modify this relationship.

The Andersen Behavior Model emphasized the importance of behavioral and environmental diagnosis (Green and Kreuter, 2005). It has been widely used in program planning and evaluation of health behavior and expanded to include non-behavioral determinants that may indirectly affect health behaviors, particularly in relation to reinforcement. For example, health service utilization among sex workers may be increased by the internal encouragement of managers in the workplace, supportive normative expectancies within an establishment, or external health regulations which promote such behavior. A growing

literature in HIV/AIDS research emphasizes the importance of environmental influence on individual preventive behavior in the commercial sex context (Bloom *et al.*, 2002; Logan *et al.*, 2002; Morisky *et al.*, 2002a; Morisky *et al.*, 2002b; Kerrigan *et al.*, 2003). But, past research has rarely investigated the effects of work condition on clinic attendance with respect to FSWs. Building upon Andersen's model, 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 relationship between the FSW and the establishment in which she is employed may well affect the likelihood of utilizing sexual health services even though these factors have not been well studied in relation to the commercial sex industry in the past. Specifically, we believed that the number of years an establishment has been in operation might well influence the degree to which it has developed procedural standards and normative expectancies that, in turn, would facilitate and enhance clinic attendance by FSWs in its employ (Hannan & Freeman, 1977). It was further hypothesized that the enforcement of external factors such as city ordinances or the infrastructure related to delivery of such sex services would vary across and within geographic areas and thereby affect the clinic attendance of individual FSWs.

In this paper, we report on the use of hierarchical liner modeling or multilevel modeling techniques (Bryk and Raudenbush, 1992; Hox, 2002) to examine the above relationships between and among individual- and contextual-level social risk factors within the workplace as related to the clinic appointment attendance of FSWs for STI screening.

METHODS

Participants

Face-to-face interviews were conducted with FSWs working for establishments between October 1994 and May 1995 on four islands (Legaspi, Cebu, Cagayan de Oro and Ilo-Ilo) of the southern Philippines. This study included only FSWs who were employed at establishments and who have ever had sexual intercourse ($N = 1,183$). Excluded from the current multilevel analysis were women who were the single worker of an establishment. This procedure yielded to a total of 1,004 women, employed at a total of 86 establishments, in clusters ranging in size from 2 to 41. Participants ranged in age from 15 to 54 (mean age = 23.2 years). They averaged 9 years of education. Over two-thirds did not live with a regular partner (either boyfriend or husband) but nearly 60% had a child. Women employed as an entertainer or hospitality girl (another term for these women might be "prostitute") made up 45% of the sample, with dancer and masahista (massage parlor women) making up the next two largest groups. On average, these women had been employed at their current workplace for 13 months although half of them had been so employed for less than 6 months. Average weekly earnings were 1,202 pesos (\$45.50 USD), ranging from 40 pesos (\$1.50 USD) to 9,000 pesos (\$340.69 USD).

In addition, across the four cities, employers in Ilo-Ilo were more actively involved in communicating with their employees about sexual health issues than those in Cebu, Legaspi, and Cagayan de Oro. Establishment managers in both Ilo-Ilo and Cagayan de Oro had more positive attitudes toward city ordinances and governmental regulation than the managers in the other two cities.

Data Collection

The present study used data that was collected as part of a large-scale participatory survey of establishment-based sex workers in the southern Philippines (Tiglao *et al.*, 1996). Three data sets from this large project were used: (1) survey data from FSWs, (2) survey data from FSW's employers, and (3) medical records from Social Hygiene Clinics (SHCs) collected

during October 1994 through May 1995. These data sets, especially well suited to the goals of the present investigation, provided essential information for both individual FSWs and their respective places of employment. Questionnaires, procedures and individual FSW consent forms were approved by the Institutional Review Boards representing the two collaborating universities: the University of California at Los Angeles (UCLA) and the University of the Philippines.

Measures

Clinic appointment attendance—The dependent variable of interest was likelihood of utilizing sexual health services. For our purposes, utilizing sexual health services was operationalized as the rate of attended appointments for STI screening. In order to adjust for period of time that a FSW was not able 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 , which is 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 or not (I_j) (Tiglaio *et al.*, 1996). The outcome behavior, then, was computed as $R = (\sum r_j * I_j) / \sum I_j$. The clinic appointment attendance ranged from 0 to 1. A FSW who attended all scheduled appointments had the highest appointment adherence to the STI screening program and received an attendance rate of 1, whereas a woman who missed all scheduled appointments received an attendance rate of 0.

Explanatory variables—Social status of a FSW was addressed by her occupation. The respondent was asked to identify her current work and coded into four categories: 1) entertainers or hospitality girls, 2) dancers, 3) masahista, and 4) others (other occupations not defined in the questionnaire). This polytomy entered into the regressions as a set of dummy variables with masahista as the reference group. Other individual social covariates we examined were the FSW's weekly wage, her length of employment, her commercial sex engagement (coded as none, involved with local clients only or with foreign clients), her age, her educational level, her partnership status and whether she had a child. Workplace-level variables included city of establishment (coded as Cebu, Cagayan de Oro, Ilo-Ilo or Legaspi) and years of business.

Data Analysis

Hierarchical linear models (HLMs) were estimated and tested using SAS (Singer, 1998). HLMs estimating clinic appointment attendance were first elaborated and then progressively adjusted, specifically examining the significance of individual occupation on appointment attendance. First, we elaborated occupation categories to investigate the association between occupation and outcome behavior. Next, the model added other sex work-related characteristics and socio-demographics 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.

RESULTS

Table 1 shows 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 parlor women (masahistas) were oldest among occupation groups; and four-fifths of massage parlor attendants had a child, in comparison 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, while 67% of massage parlor attendants and 62% of dancers were in a similar situation.

Table 2 presents HLM models that sequentially elaborate the relationship between occupation and clinic appointment attendance. The null model (sometimes called the unconditional random-effects Analysis of Variance model) was estimated with no independent variables, but with random effect components of intercepts at workplace level. We found that the intraclass correlation (ρ) was 0.58 ($p < 0.001$). That is, almost sixty percent of the variance of appointment attendance rate was at the workplace level. In effect, there was considerable clustering of appointment attendance rate within workplace. Model 1 adds random slopes for occupation. The β coefficients for entertainer, dancer, and others were significantly negative, indicating that these women attended clinic appointments for STI screening, on average, less frequently than massage parlor women. In addition, the slope for the entertainers was significantly random, meaning that its effect varies across workplaces. The slopes of other occupations were not significantly random and their effects were therefore fixed in subsequent models. Compared to the null model, Model 1 represents a significant improvement in fit.

Model 2 adds other sex work-related characteristics such as weekly wage, commercial sex involvement, length of employment and their multiplicative interaction terms as a set. As shown, women who had lower wages but were not involved in commercial sex tended to attend clinic examinations more frequently than those who had higher wages and were involved in commercial sex. Moreover, the effect of one was significantly contingent upon the other. This interaction showed that FSWs who had higher wages and who reported not engaging in commercial sex were particularly likely to attend clinic appointments. In addition, women who had been employed for longer periods of time seemed to attend clinic appointments more frequently than those who were relatively newly employed. Compared to Model 1, the coefficients for working as an entertainer, dancer, and others diminished by about 10–20%, indicating that some of their effects are redundant with other sex work-related characteristics. Model 2 also represents a significant improvement in fit over Model 1.

In Model 3, the influence of sex work-related characteristics is tested by adding socio-demographic variables such as age, education, parity, and partner status. This model basically revealed no appreciable differences from Model 2, and resulted in no significant improvement in fit over Model 2. Since socio-demographics had no significant association with clinic attendance, these variables were not included in subsequent models.

Model 4 adds main effects of the two workplace-level variables: city and years of business. As shown in Table 2, 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. These variables were hypothesized to account for a moderate portion of the occupation coefficients, compared to Model 2. The entertainer and dancer coefficients have now decreased by about 20%. Other individual-level coefficients remained virtually unchanged, as did the amount of random variation attributed to working as an entertainer. Compared to Model 2, Model 4 represents a significant improvement in fit.

In Model 5 the cross-level interactions between workplace-level variables and entertainer at the individual-level are included. As shown, there was a significant interaction between working as an entertainer at the individual-level and Cebu city at the workplace-level, indicating that entertainers who worked in Cebu city attended clinic examinations much

more frequently than non-entertainer women working in other cities. In addition, there was a significant interaction between working as an entertainer at the individual level and number of years the establishment had been in operation at the workplace-level, indicating that entertainers who were employed at long-established workplaces attended clinic appointments much more frequently than FSWs employed at newly-established workplaces. Coefficients for other explanatory variables in the model remain largely unchanged compared to Model 4.

DISCUSSION

Regular attendance for STI screening has been demonstrated to be one effective way to control STI and reduce HIV within the context of commercial sex at the national level (UNAIDS, 2003; Hanenberg & Rojanapithayakorn, 1998). But, there has been little systematic study of those who are most at risk (FSWs) in the context within which a FSW works, lives, and seeks health services.

Results of the present study provide empirical data to help support the current consensus in both the preventive medicine and public health literature suggesting that multiple factors are at play in the process of decision-making with respect to utilizing health services. Our findings also partially 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 labeled as guest relation officers rather than prostitutes, their occupation, as such, 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 the 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 that FSWs have experienced as a result of what they perceive to be diminished status as women and their increased vulnerability to STI/HIV associated with this particular occupation (Steen & Dallabetta, 2003).

We also found that FSWs with commercial sex involvement attended clinic appointments more frequently than those not involved in commercial sex work. Given that commercial sex is one of the principal risk factors for STI and HIV transmission, it was encouraging to know that FSWs at greater risk, from the standpoint of their risky behavior, attended clinic examinations more often than those who were at lower risk. On the other hand, it should be noted that there were undoubtedly FSWs reporting that they were not engaging in commercial sex while in truth they were so engaged. Their lack of attendance could well compromise the long-term prognosis for at least some FSWs given that the detection of STIs is, as a consequence, at best delayed and proper treatment not initiated. This finding suggests that future programs need to address the specific individual, family, or culture-related barriers that prevent some FSWs from admitting that they have engaged in risky behaviors and, at the same time, not sought appropriate treatment.

We did not find that a clear, consistent relationship between income and clinic attendance among FSWs in this study. Possible explanations include free STI screening programs for FSWs as well as the close proximity of the workplaces to the clinic, both of which encourage lower-wage FSWs to keep their clinic appointments while minimizing transportation barriers. However, the significant interaction found in this study suggested that FSWs who earned weekly wages of 500 pesos or more and reported no commercial sex involvement attended clinic appointments more frequently than those who had commercial sex with

Filipino clients. This subgroup difference should be reexamined in future research. There is clearly the potential for research such as this to provide more complex findings if understanding such interactions is included in the analytical strategy. Thus, in order to advance the knowledge on sex work-related characteristics associated with clinic appointment attendance, future research should examine interactions among SES and risky behaviors.

Our findings supported previous studies with respect to the importance of workplace contexts on health service utilization (Gysels *et al.*, 2002; Sedyaningsih-Mamahit, 1999; Sobrevega & Sanchez, 1996). FSWs who work in Ilo-Ilo had the best attendance for STI examination. As previous studies suggest (Rogers *et al.*, 2002; Reif *et al.*, 2005), geography, by itself, can introduce variables related to FSWs including establishment manager attitudes, beliefs, values and relative status as well as 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 infections of workers 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 not conforming to established protocols (Ghys *et al.*, 2002; Sobrevega and Sanchez, 1996).

It is notable that we found the impact of individual-level occupation on attending clinic appointments is contingent on the characteristics of the workplace. These cross-level interactions supported Andersen's model and draw attention to the concept of person-environment fit. Entertainers as previously noted were most likely to work in karaoke TV centers, a relatively new type of establishment which became popular in the early 90's. This may explain the significant increase in clinic attendance rate for establishments being in operation for more than 3 years. Dancers, massage parlor attendants and receptionist are more traditional occupations and consequently have a longer-established tradition of manager involvement in encouraging clinic attendance, implying that the 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 behaviors 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 behavior knowing of the endogeneity problem. FSWs might well not be randomly allocated to workplaces owing to various reasons such as specific attributes of workplaces and a FSW's own characteristics (Sedyaningsih-Mamahit, 1999). Recruitment into the sex industry may also be due to social networks or specific characteristics of workplaces. When these factors are not completely taken into account, the allocation to workplaces may upwardly bias the size of the workplace context effects. In addition, the nature of the cross-sectional data analyzed herein cannot disentangle or conclusively establish the causal links suggested herein. However, this theory-based study using the multilevel analytical approach provides important insights, identifying the important determinants of clinic attendance at individual and workplace levels.

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Table 1

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

Explanatory variables	Total N = 1,004	Entertainer N = 459	Dancer N = 282	Masahista N = 180	Other N = 83
Socio-demographics					
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
500–1,000	20.42	28.76	17.02	5.56	18.07
1,000–1,500	25.20	21.79	31.56	27.22	18.07
1,500+	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
Appointment attended (%)	0.50 (0.34)	0.32 (0.33)	0.61 (0.27)	0.77 (0.24)	0.55 (0.24)

Table 2

Results of multilevel modeling of percentage of appointment attended

	β (SE)					
	Null model	Model 1	Model 2	Model 3 ^f	Model 4	Model 5
<i>N</i>	1,004	1,004	1,004	1,004	1,004	1,004
<i>Individual-level variables</i>						
<i>Self-identified occupation^d</i>						
Entertainer		−0.29 (0.05)***	−0.26 (0.05)***	−0.27 (0.05)***	−0.21 (0.05)***	−0.28 (0.05)***
Dancer		−0.13 (0.04)**	−0.11 (0.04)**	−0.12 (0.04)**	−0.09 (0.04)*	−0.09 (0.04)*
Other		−0.19 (0.05)***	−0.15(0.05)**	−0.16 (0.05)***	−0.08 (0.05)	−0.06 (0.05)
<i>Weekly wage in pesos^b</i>						
500–1,000			−0.06 (0.02)*	−0.06 (0.03)*	−0.06 (0.03)*	−0.06 (0.03)*
1,000–1,500			−0.04 (0.03)	−0.05 (0.03)	−0.04 (0.03)	−0.04 (0.03)
1,500+			−0.04 (0.03)	−0.04 (0.03)	−0.05 (0.03)	−0.05 (0.03)
<i>Work duration in months^c</i>						
3–6			0.04 (0.02)	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)*	0.04 (0.02)
12+			0.07 (0.02)**	0.08 (0.02)**	0.07 (0.02)**	0.07 (0.02)**
<i>Commercial sex involvement^d</i>						
No			−0.07 (0.03)*	−0.07 (0.03)*	−0.08 (0.03)*	−0.08 (0.03)*
Involved with foreign clients			0.03 (0.02)	0.03 (0.02)	0.03 (0.02)	0.04 (0.02)
<i>Interaction terms</i>						
No commercial sex x wage 500–1,000			0.10 (0.04)*	0.10 (0.04)*	0.11 (0.04)*	0.10 (0.04)*
No commercial sex x wage 1,000–1,500			0.06 (0.04)	0.06 (0.04)	0.07 (0.04)	0.06 (0.04)
No commercial sex x wage 1,500+			0.09 (0.05)	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)***	0.72 (0.07)***	0.54 (0.06)***	0.59 (0.06)***
<i>Workplace-level variables</i>						
City ^e						

	β (SE)					
	Null model	Model 1	Model 2	Model 3 [†]	Model 4	Model 5
<i>N</i>	1,004	1,004	1,004	1,004	1,004	1,004
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)
<i>Cross-level interaction</i>						
Entertainer x Cebu						0.23 (0.06) ^{***}
Entertainer x years of business						0.02 (0.01) [*]
Random variance component						
σ_e^2	0.05 (0.002) ^{***}	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) ^{***}	0.02 (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) [*]	0.02 (0.01) [*]
σ_{u01}		0.02 (0.005) ^{***}	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 [*]	1.08	22.80 ^{***}	12.99 ^{***}
Degrees of freedom		5	11	4	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

[†]Model 3 adjusts socio-demographics (age, level of educational attainment, partner status, and parity) for Model 2.