

HIV/AIDS Risk Perception and Sexual Behavior among Commercial Female Sex Worker in Thailand

Phrutthinun Surit¹, Sukkid Yasothornsrikul¹, Ratchanee Mitkitti^{2*}

¹Faculty of Medical Science and Centre of Excellence in Medical Biotechnology (CEMB), Naresuan University, Phitsanulok, Thailand

²School of Nursing, Mae Fah Luang University, Chiangrai, Thailand

Email: *ratchanee.mit@mfu.ac.th

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Abstract

Background: Commercial female sex workers (CFSWs) are considered a high-risk group for HIV/AIDS. The prevalence of HIV/AIDS trends to increase among those groups also in Thailand. An adequate perception of the degree to which one is at risk of having HIV is necessary for behavioral change and of safe behaviors. HIV/AIDS risk perception among CFSWs was needed to reduce HIV/AIDS infection. **Methods:** A cross-sectional study was conducted among 141 CFSWs in Bangkok, Thailand. Participants were selected using convenient and purposive sampling methods for January to October 2019. Self-access questionnaire was used for collecting data with the reliability testing of 0.82. Logistic regression employed to identify adjusted odd ratio between demographic data, sexual behaviors and HIV/AIDS risk perception, p-value less than 0.05 was considered statistically significant. **Results:** 51.77% of CFSWs perceived themselves at high risk for HIV/AIDS infection. Most CFSWs reported that they did not consistently use condom (57.45%), factors associated with perception risk of HIV/AIDS including education level (adjusted OR = 2.23, 95% CI = 1.07 - 4.54), knowledge of HIV and STDs (adjusted OR = 3.65 and 3.22, 95% CI = 1.89 - 3.91), Condom use (adjusted OR = 2.56, 95% CI = 1.05 - 2.90) years engaged in sex work, age of initiating in sex work, frequency of sex work in the last month and unplanned sex work were significant with risk perception of HIV/AIDS (adjusted OR = 3.33, 2.71, 2.67, 2.56 and 95% CI = 1.99 - 3.84, 1.72 - 3.32, 1.29 - 3.12, 1.05 - 2.78 respectively), and had HIV/STDs test (adjusted OR = 3.22, 95% CI = 2.11 - 3.95). Other used illicit drugs by injection, smoking and alcohol consumption had a strong association with the high perception of HIV/AIDS among CFSWs. **Conclusion:** Majority of CFSWs with risky sexual behaviors had a

high HIV/AIDS risk perception. Effective educational programmes are necessary to enable CFSWs to correctly assess their own HIV/AIDS risk and change risk behaviors based on self-assessment of actual risk.

Keywords

Commercial Female Sex Workers, HIV/AIDS, Prevalence, Sexually Transmitted Infection, Epidemiology

1. Introduction

The high epidemic of HIV/AIDS and Sexual Transmitted Diseases (STDs) is the world serious public health and social problem. In the past decade, Thailand has experienced a rapid increase in HIV/AIDS cases; the number of Thai people living with HIV has continued to raise despite the availability of effective prevention strategies [1] [2]. Thailand became the first country in Asia to launch the 100% Condom Use Programme (CUP), which a collaborative effort among local authorities, public health officers, sex establishment owners, and sex workers. The objective of the programme was to ensure that clients could not purchase sexual services without condom use. As a result, HIV prevalence declined, the adult HIV prevalence was estimated to be 1.4% in 2007 and 610,000 adults and children were estimated to be living with HIV [3] [4]. In the early 1990s, about 80% of new infections were among female sex workers (FSWs) and their clients [5]. The success of the 100% CUP resulted in the reduction in the proportion of annual new infections in sex work settings from 80% to 15%. As of 2008, it was estimated that 4% and 10% of new infections were among FSWs and their clients, respectively [6]. According to the report on sentinel surveillance of HIV infection in the seven major target groups of population in Thailand, implemented in all provinces during the period 1989-2009, included were blood donors, pregnant woman, injection drug users, male clients attending STIs clinic, direct female commercial sex-workers (FCSWs), indirect FCSWs and military recruits or conscripts [7]. National HIV prevalence decreased from 27% to 5% among FCSWs in brothels and from 10% to 3% in non-brothel sex establishments during the same time. Although the HIV epidemic is declining in a recent year, certain groups have much higher rates of HIV compared to the general population, those most affected are men who have sex with men (MSM), male and female commercial sex workers, transgender people and people who injected drugs. Spouses of these populations and people living with HIV, migrant workers and prisoners are also more vulnerable to HIV than others [1] [2].

In Thailand, HIV prevalence is far greater among sex workers. In 2014, of the estimated 141,769 sex workers in Thailand, HIV prevalence was approximately 12% among male sex workers (MSWs) and 2% among FCSWs [4]. However, urban settings have shown to yield exceptionally high HIV prevalence among FCSWs, such as 20% in Bangkok and also high in big cities [5]. Results from the

sentinel surveillance system have been remarkable: between 1997 and 2007, national HIV prevalence decreased from 27% to 5% among CFSW in brothels and from 10% to 3% in non-brothel sex establishments during the same period [8]. The number of direct FSWs working at brothels, teahouses, hotels, and on the street substantially decreased in Thailand [9]. Instead, the number of indirect FSWs working at massage parlors, bars/clubs, and restaurants and online CFSWs has been increasing [10] [11]. The trend from direct to indirect sex work is problematic for HIV prevention efforts [9], especially online CFSWs because it is difficult to identify and outreach to indirect CFSWs, and commercial sex activities often occur outside establishments, except for massage parlors [12] [13] [14]. Beside this, the risk of HIV and STDs will be dramatically high in the future.

Commercial Female sex workers are women who have been professionally involved in sex for money or any gifts for their source of income [15]. Due to their involvement, CFSWs are considered highly responsible for transmitting HIV/AIDS and sexually transmitted infections (STIs) from high-risk to low-risk population [16]. Globally, the prevalence of FSWs remains high and varies by geographical regions. It was found that the estimated prevalence of HIV infection among FSWs was 0.3% in the Middle East and North Africa and 29.3% in the sub-Saharan region, while in the developed countries it was about 1.8% of the total female population [17] and approximately 2.0% in Thailand, while condom use with clients among female sex workers about 27% [18].

Therefore, CFSWs working in night clubs/bars and spa/saunas remain at high risk of becoming exposed to HIV and other sexually transmitted infections (STIs) [2]. Approximately 40% of FSWs worldwide have entered the sex trade before the age of 18 [5]. Adolescent female sex workers are especially at higher risk for HIV/STI infections [6] because their genital tracts are not fully developed and the previous study show high risk of HIV infection among this group for example, two studies on FSWs in Thailand found that adolescent FSWs reported less condom negotiation and condom use and more anal sex compared to older FSWs [11] [12]. In Vietnam, a study showed how adolescent sex workers reported using condoms less frequently [13]. In addition to engaging in higher-risk behaviors on a more frequent basis, younger sex workers in South Asia had a greater number of sex clients per week and had less knowledge of HIV than their older counterparts [6] [7].

In previous studies, based on prevailing theories on health behaviors such as the Health Action Process Approach (HAPA) and the Health Belief Model, the perception of HIV infection risk has been measured by the assessment of self-perceived likelihood of contracting the infection [19] [20] [21]. This experimental approach can be effectively applied to understand the behavior related to HIV or other sexually transmitted diseases and to support both specifically targeted interventions. The perception of HIV risk is one of the most studied research topics [13] [15]. HIV risk perception should, at least theoretically, induce individuals to take precautionary measures and/or to refrain from risky beha-

vivors [22] [23]. Therefore, attempts to increase both the individual awareness and risk perception are common approaches to interventions for HIV prevention [20] [21]. In particular, the relationship between the perception of risk and risk behavior has not been fully investigated, probably due to conceptual problems. It would be therefore necessary to pay special attention to clients of CFSWs which are neither a homogeneous and well-outlined population nor easily identifiable and accessible within specific preventive interventions [6] [7].

Accurate self-assessment of HIV/AIDS risk perception can provide valid data to identify how people think and feel about health outcomes related to sexual risk activities [24]. Availabilities of data that are locally relevance can help to improve understanding of CFSW's HIV risk perception and its effect on their sexual behavior. Such information is also critical for policy and guiding for developing effective prevention programme in current situation. Although there are some studies about HIV/AIDS risk perception and risk behavior among different populations, such as injection drug used, Men who have sex with men (MSM) and HIV positive people, there is limitation information on HIV/AIDS perception with sexual behavior and its association among direct and especially indirect CFSWs in Thailand. This study aimed to determine risk perception of HIV/AIDS and their association with sexual behaviors among CFSWs in Thailand.

2. Methods

2.1. Study Sample and Procedure

Study area, Bangkok is one of the largest metropolitan areas in Thailand where the HIV/AIDS transmission route is largely attributed to heterosexual contact. Since provision of commercial sexual services is unacceptable in Thailand and most sex workers generally operate covertly, it is impossible to estimate the actual number of CFSWs operating in Bangkok. Non-governmental organizations (NGOs) and community primary care units are the best links to the CFSW population, and we relied on their knowledge to conduct our study among entertainment areas such as Patpong Street and Silom area where access to FSWs was considered feasible.

The cross-sectional study was employed in this study, among 141 CFSWs in Bangkok Thailand were selected from January to October 2019. By carrying out a detailed review of the literature and performing a small-scale pre-survey with a limited portion of the CFSWs in Thailand, we found the risk perception and behaviors, such as unprotected sexual intercourse, was 27% [18]. By taking a sample size estimation approach, the error was calculated as 0.15 ($d = 0.15$) Participate proportion as 27% ($P = 27\%$) the confident interval as 95% (95% CI) and $\alpha = 0.05$ [25]. The method for data collecting: First, explorative field work was done to identify the site of CFSWs working and living. The purposive sampling and convenient sampling that has been successfully used in previous studies to recruit hidden population was employed to recruit CFSWs from drinking bar,

massage parlors, A Go bar, street base female sex worker and other out-reach spots. Inclusion criteria including age 20 years and older, having had sex for money and identifying oneself as sex worker, all participants' willingness to participate in the study. Participants were asked to sign inform consent if they couldn't read and write Thai verbal inform consent was accepted. We explained the study purpose to each of the CFSWs and emphasized that participation was voluntary and anonymous, and they were informed about the confidentiality for their information and their right to withdraw from the study at any time.

2.2. Measurement of HIV Risk Perception

The self-access questionnaire was conducted by researcher consisted of three parts. Part one was demographic data such as age, education, marital status, and nationality. Part two was perception and self-protection of HIV and STDs and the last part was open-end questionnaire that asked for participants about their opinion and suggestion for risk behavior and perceptions. The question "How much do you think you are at HIV risk?" was conducted for measure risk of HIV/AIDs, the answer were rates based on 5 point Likert response (1 = very low, 2 = low, 3 = somewhat, 4 = much, and 5 = very much) then, the Likert score was changed to binary outcome of high HIV/AIDs risk perception (=1) and low HIV/AIDs risk perception (=0) for data analysis. The previous studies shown the acceptable for reliability and validity for this single item to measure HIV risk perception [26] [27], other sexual behaviors were assessed base on several variables, including age of initiating sex work, frequency of sex work in the last month, unplanned sex, sex work with client without condom interpreted as risk sexual behavior, on the other hand, having a HIV test, and condom use interpreted as protective sexual behaviors. The questionnaire of this study was test for Cronbach's alpha for the rating scale was 0.82.

2.3. Statistical Analysis

Data were double-entered, and all statistical analyses were performed using the using statistical software. The descriptive statistic including mean, standard deviation and percentages was used for described participant's characteristics. Chi-square test was used to compare differences of socio-demographic characteristics between high and low HIV's perception. Then, logistic regression was employed to find factors associated with high and low of HIV perception. Statistical significance was considered at $p < 0.05$ (two-tailed).

3. Results

3.1. Characteristics of Participants

The total number of participants was 141 residents in Bangkok, Thailand. The majority were 30 - 39 year old (46.10%), 20 - 29 year old (31.91%) and 40 - 49 year old (12.06%) respectively, with mean age of 32.25 (SD = 2.32), graduated from secondary school of 48.94%, most of them were single of 32.62%, divorce

of 30.50% and widow of 26.24%. The data show that 58.87% were Thai nationality, 29.79% were Myanmar and 11.35% were Lao (**Table 1**).

3.2. Perception and Risk Behavior of HIV/AIDs

The perception of HIV/AIDs, the study shown the high perception more likely greater than low perception group, which was 51.77% shown self-rating as high risk perception of HIV/AIDs, on the other hand, 48.23% reported low perception. The knowledge of HIV/AIDs and STDs shows moderate of 46.81%, Low of 36.17% and presented high of 17.02%. Besides, the consistency of condom uses with clients the study shown CFSWs always used condom of 31.91%, sometime of 57.45% and never of 10.64%, while majority of CFSWs never used condom with their couple of 52.48%. CFSWs engaged with sex work approximately 2 - 4 years (32.62%) and majority of them have age of initiating sex work less than 30 years old (55.71%). Future more, CFSWs reported frequency of sex work in the last month less than 10 times of 46.10%, and have a high rate for unplanned sex work of 56.74%. Majority of them ever had HIV/STDs test of 91.49% and CFSWs also reported ever used illicit drugs by injection, smoking and alcohol consumption of 10.64%, 68.79%, and 93.62% respectively (**Table 2**).

Table 1. Characteristic of CFSW (n = 141).

Characteristics	n	%
Age		
20 - 29	45	31.91
30 - 39	65	46.10
40 - 49	17	12.06
50 - 59	12	8.51
60+	2	1.42
Education		
Primary school	45	31.91
Secondary school	69	48.94
Bachelor degree	15	10.64
Other	12	8.51
Marital status		
Single	46	32.62
Married	15	10.64
Divorce	43	30.50
Widow	37	26.24
Nationality		
Thai	83	58.87
Myanmar	42	29.79
Lao	16	11.35

Table 2. Perception and self-protection from HIVs and STDs.

Characteristics	n	%
Perceived to be at risk for HIV		
High	73	51.77
Low	68	48.23
Knowledge of HIV and STDs		
Good	24	17.02
Moderate	66	46.81
Poor	51	36.17
Condom used with clients		
Always	45	31.91
Sometime	81	57.45
Never	15	10.64
Condom used with couples		
Always	15	10.64
Sometime	52	36.88
Never	74	52.48
Years engaged in sex work		
>1	27	19.15
2 - 4	46	32.62
5 - 7	32	22.70
8 - 10	25	17.73
<10	11	7.80
Age of initiating sex work		
>30	78	55.71
30 - 39	41	29.29
<40	21	15.00
Frequency of sex work in the last month (time)		
>10	65	46.10
10 - 20	47	33.33
<20	29	20.57
Unplanned sex work		
Yes	80	56.74
No	61	43.26
Ever had HIV/STDs test		
Yes	129	91.49
No	12	8.51

Continued

Ever used illicit drugs by injection		
Yes	15	10.64
No	126	89.36
Smoking		
Yes	97	68.79
No	44	31.21
Alcohol consumption		
Yes	132	93.62
No	9	6.38

3.3. Factors Association with Perception of HIV/AIDs among CFSWs

Of all CFSWs, 51.77% had high perception of HIV/AIDs. Among those age group of 30 - 39 years old more likely to have a high perception than reference group (20 - 29 years old)(adjusted OR = 2.10, 95% CI = 1.01 - 4.23, p-value < 0.05) and those have a higher education level (secondary school of adjusted OR = 2.23, 95% CI = 1.07 - 4.54, p-value < 0.01). The participants from Myanmar had a low perception when compared with Thai (adjusted OR = 3.12, 95% CI = 1.11 - 4.21, p-value < 0.01). Good knowledge of HIV and STDs more likely have a high perception more than moderate and poor group (adjusted OR = 3.65 and 3.22, 95% CI = 1.89 - 3.91 and 1.56 - 3.87, p-value < 0.01 respectively). Condom use was more significant with high perception of HIV/AIDs (adjusted OR = 2.56, 95% CI = 1.05 - 2.90, p-value < 0.01) and condom use with couple (Adjusted OR = 2.56, 95% CI = 1.11 - 3.85, p-value < 0.05). For the sex work, years engaged in sex work, age of initiating in sex work, frequency of sex work in the last month and unplanned sex work were significantly with perception of HIV/AIDs (adjusted OR = 3.33, 2.71, 2.67, 2.56 and 95% CI = 1.99 - 3.84, 1.72 - 3.32, 1.29 - 3.12, 1.05 - 2.78, p-value < 0.01 respectively). CFSWs who ever had HIV/STDs test trend to had a high perception (adjusted OR = 3.22, 95% CI = 2.11 - 3.95, p-value < 0.01). This study also confirm that ever used illicit drug by injection, smoking and alcohol consumption had a strongly association with the high perception of HIV/AIDs among CFSWs (**Table 3**).

4. Discussion

HIV/AIDs infection spreading in general population occurs prevalently through sexual activity. Although the infection prevalence in general population is quite low, CFSWs bears a higher infection risk and can spread HIV to low-risk general population. This study documented risk factor and perception among CFSWs in Thailand. The true extent of CFSWs potential and occurred HIV transmission to their clients and general population must be however fully characterized since CFSWs clients have not the full perception of HIV infection risk. This study was

examined risk behavior and self-perception among CFSWs in Bangkok, Thailand. Those who reported initiating sex work in an age range of 20 - 61 years (mean age 32.25). These data were like those found in previous studies, in which the age of CFSWs range between 21 and 58 years [28].

Table 3. Factor associated with perception of HIV/AIDS among CFSW.

Variables	High risk perception (n = 73)		Low risk perception (n = 68)		Adjusted OR	95% CI	p-Value
	N	%	n	%			
Age							<0.05
20 - 29	26	35.62	19	27.94	1		
30 - 39	31	42.47	36	52.94	2.10	1.01 - 4.23	
40 - 49	10	13.70	7	10.29	1.10	0.12 - 2.23	
50+	6	8.22	6	8.82	0.12	0.11 - 1.54	
Education							
Primary school	27	36.99	18	26.47	1		
Secondary school	32	43.84	37	54.41	2.23	1.07 - 4.54	
Bachelor degree	8	10.96	7	10.29	1.21	0.22 - 2.67	
Other	6	8.22	6	8.82	0.62	0.11 - 1.35	
Nationality							<0.01
Thai	55	75.34	28	48.72	1		
Myanmar	12	16.44	30	38.46	3.12	1.11 - 4.21	
Lao	6	8.22	10	12.82	1.24	0.45 - 2.61	
Knowledge of HIV and STDs							<0.01
Good	7	9.59	17	25.00	1		
Moderate	35	47.95	31	45.59	3.65	1.89 - 3.91	
Poor	31	42.47	20	29.41	3.22	1.56 - 3.87	
Condom used with clients							<0.01
Always	30	41.10	15	22.06	1		
Sometime	35	47.95	46	67.65	2.01	1.05 - 2.90	
Never	8	10.96	7	10.29	1.12	0.35 - 1.78	
Condom used with couples							<0.05
Always	9	12.33	6	8.82	1		
Sometime	31	42.47	21	30.88	2.56	1.11 - 3.85	
Never	33	45.21	41	60.29	2.24	1.98 - 2.67	
Years engaged in sex work							<0.01
>1	17	23.29	10	14.71	1		
2 - 4	25	34.25	21	30.88	3.33	1.99 - 3.89	

Continued

5 - 7	11	15.07	21	30.88	2.12	1.21 - 3.77
8 - 10	15	20.55	10	14.71	1.97	0.23 - 3.07
<10	5	6.85	6	8.82	1.01	0.30 - 2.15
Age of initiating sex work						
>30	38	52.05	40	59.70	1	
30 - 39	27	36.99	14	20.90	2.71	1.72 - 3.32
<40	8	10.96	13	19.40	2.05	1.67 - 3.11
Frequency of sex work in the last month (time)						
>10	34	46.58	31	45.59	1	
10 - 20	30	41.10	17	25.00	2.67	1.29 - 3.12
<20	9	12.33	20	29.41	1.98	0.57 - 2.86
Unplanned sex work						
Yes	41	56.16	39	57.35	1	
No	32	43.84	29	42.65	2.56	1.05 - 2.78
Ever had an HIV/STDs test						
No	66	90.41	63	92.64	1	
Yes	7	9.59	5	7.35	3.22	2.11 - 3.95
Ever used illicit drugs by injection						
Yes	5	6.85	10	14.71	1	
No	68	93.15	58	85.29	2.97	1.57 - 3.33
Smoking						
Yes	42	57.53	55	80.88	1	
No	31	42.47	13	19.12	2.02	1.44 - 3.06
Alcohol consumption						
Yes	68	93.15	64	94.12	1	
No	5	6.85	4	5.88	2.13	1.72 - 2.90

The result of this study found that more than half of participants (51.77%) perceived themselves to be a high risk of HIV. This finding is consistent with evidence found in previous studies that reported high risk for HIV among CFSWs [29] [30]. Results of this study showed that participant who had a higher frequency of sex work and years engage in sex work more likely to perceive themselves to be a high risk of HIV/AIDs infection [29]. Several studies reported that having high number of sexual works is associated with an increased perceived of risk for HIV infection [31].

As already confirmed by literature studies a high level of education has been observed among study group and the result also confirmed that high education trend to have a high perception and have a low risk of HIV/AIDs infection [32] [33] [34]. Previous studies also confirmed that CFSWs with high HIV knowledge

perceived themselves at lower risk for HIV infection [35] [36]. One of the interesting findings was that the CFSWs who had HIV/STDs testing were more likely to perceive themselves to be at risk with HIV than those who had not tested for HIV [29]. The reason explanation for this finding is that CFSWs who engage in risk behaviors may feel to be at high risk for HIV and seek more HIV test services. Our finding suggest that it is necessary to provide educational programme to enable CFSWs to correctly judge their own risk for getting HIV and encourage them for HIV testing. On the other hand, improving accessibility of HIV testing for CFSWs can be an important strategy for HIV prevention among this group [29].

For instance, it was found in many studies that knowledge on HIV prevention enables protective sexual behavior [37]. Additionally, CFSWs who had a sound knowledge on HIV/AIDS tended to reduce their numbers of partners and use condoms during sexual intercourse, which resulted in them feeling protected against HIV, thereby increasing the rate of condom use as the partners became more familiar and intimate. In contrast, numerous studies show little impact on condom use with increased knowledge of its benefits [38] [39]. Since the 100% condom-use programme was implemented in Thailand, there have been many campaigns aimed at helping people understand how to use condom and from where condom is available, and information on the availability of condoms was circulated everywhere. However, using condom also varied for some other reasons [40]. This study found that the number CFSWs who always use condom with clients of 31.91%. This study also found that CFSWs who inconsistently used condom with their client perceived themselves to be a high risk of HIV/AIDS infection compared to those CFSWs who consistently used condoms. Previous studies showed another barrier to condom use with clients such as absence of self-efficacy among CFSWs, social norms unsupportive of condom use, and gender inequality in sexual relationship of CFSWs with their sexual partners [29] [41] [42] [43]. Therefore, it seems that these CFSWs think they must accept the idea of being at risk. They need to get enough money to live on, so they do not have enough power to negotiate about safe sex behaviors with sexual partners because of fear of rejection by their sexual partners and fear of losing their emotional of financial support [29]. This study also found that CFSWs who had injection drugs, alcohol consumption and smoke perceived themselves to be a high risk of HIV/AIDS infection, those factors lead them to have more clients and high frequency of sex work.

Finding of this study had several limitations, first, no causal inferences were drawn due to the cross-sectional natural of the study. Second, the result of this study might have been affected by measurement error because self-access questionnaire was used and the recruitment of CFSWs used convenient and accidental sampling. Therefore, the results cannot be generalized to all CFSWs in all country. Despite these limitations, this study provided important insights about HIV risk perception and its association with sexual behaviors and experiences among CFSWs that can be used for HIV prevention programme.

5. Conclusion

CFSWs with risky sexual behaviors correctly perceived themselves to be at high risk of HIV/AIDS. Therefore, it seems that they were aware of their individual risk behaviors. However, the finding is that CFSWs with high HIV knowledge considered themselves to be at higher risk. Thus, educational programme is necessary to enable CFSWs to correctly assess their own HIV risk and encourage behavioral change based on self-assessment of actual risk. Furthermore, risk behaviors such as inconsistently condom use, high frequency of sex works and clients, injection drug use, and alcohol consumption during sex work, lead CFSWs to perceive themselves to be a high risk of HIV/AIDS infection. Also, the Government Organizations and Non-Government Organizations should bring these findings including for HIV/AIDS control and prevention programme to decrease HIV/AIDS infection among CFSWs groups.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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