Original Research Report

Multiple Perceptions and Practices of HIV Prevention among Northern Thai Female Factory Workers : Implications for Alternative HIV Prevention

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Objective : This article examines the ideas and practices of HIV prevention among young factory women in northern Thailand. In doing so, it questions the ways that those who structure HIV prevention programs have defined and approached the emergent risk of HIV infection among the factory women. The article specifically examines the ways these women interpret HIV risk and take HIV prevention measures consistent with their self-images of gender and sexuality, feeling of trust, and the state of self-reliance in relation to their partners and men in general.

Materials & Methods : Sixty factory women aged from 17 to 34 from an industrial estate in Lamphun were interviewed.

Results : The results illustrate the existence of diverse and often transformative preventative methods. The way they used or intended to use particular methods depended on how they developed their self-images, trust and self-reliance and how the three things were correlated. Actually the state and correlation of the three were dynamic, and "soft strategies" paved the way for them to find a compromise between their conflicting self-images, feelings and attitudes towards their partners and men in general.

Conclusion : The study results challenge HIV prevention policy makers to develop programs that consider the factory women's various desires and difficulties as well as social and emotional needs for respect and self-esteem, and that positively integrate their knowledge and practices into mainstream AIDS education.

Key words : HIV/AIDS, HIV prevention, factory women, northern Thailand

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Introduction

Thailand is known as a country that has successfully countered the HIV/AIDS epidemic with a strong political commitment and multisectorial approaches.[1,2] Central to the Thai HIV prevention efforts is 100% condom promotion, which was specifically targeted first at female sex workers and their male clients and then the general public. Thanks to such strategic actions, the prevalence of HIV/AIDS has gradually and significantly decreased, with a marked decline among female sex workers.[3] According to the most recent epidemiological report on HIV/AIDS in Thailand, the cumulative number of reported AIDS cases was 277,915.[4]

Nonetheless, Thailand still faces serious social and epidemiological consequences of HIV/AIDS, with AIDS as the leading cause of death among those of working age (25–44 years) in 1999 and 2000.[3] Moreover, in 2000, youths and young adults (15–24 years) accounted for almost 60% of all new HIV infections in the country with a gradual increase among teenagers.[5] Several recent articles focusing on Thai adolescents and young adults have shown that they are at high risk for having unprotected sex, being coerced to have sex, and consequential health risks, including HIV infection.[6,7] This situation calls for further HIV prevention efforts specifically targeted at the young population. Strengthening the mainstay approach of condom promotion may not be effective, since the unpopularity of condom use among the young people remains strong even after decades of Thai government condom campaigns. The

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time has come to explore the potential of alternative prevention approaches, many of which have been developed and utilized by the young people themselves.

In this article, I examine the meanings and potentials of HIV prevention practices among factory women working at the Northern Region Industrial Estate (NRIE) in Lamphun, northern Thailand. Focusing on the risk-reduction strategies among factory women, this article seeks to shed light on the interface between HIV prevention practices and the complex and shifting desires young factory women have in regard to sexual identity and sexual relations. It specifically focuses on the ways these women interpret HIV risk and take HIV prevention measures consistent with their sexual identity and sexual relations. In a social context in which multiple social risks other than those associated with HIV/AIDS predominate, factory women employ multiple and transformative strategies of coping with HIV/AIDS. The situation of factory women has important implications for HIV prevention by highlighting the often simplistic assumptions HIV prevention policy makers have with respect to young people's sexual identity and sexual relations, as well as their social and emotional needs for respect in implementing particular prevention strategies.

1. The NRIE, Factory Women and AIDS Epidemiology

Lamphun, hosting the NRIE, is the third smallest province in the northern region of Thailand, with a population of 407,207, of whom about 10% reside in the city of Lamphun.[8] Since the establishment of the NRIE in 1985, the city has become the most rapidly developing area in the northern region. In 2001, the area encompassing the city of Lamphun and the city of Chiang Mai, a northern business center located approximately 25 km north of Lamphun, was designated the regional center of social and economic development. The number of young migrant workers in the city of Lamphun has grown over the past two decades along with the regional development and the increase in the number of factories operating at the NRIE in particular. In 2002, as many as 64 factories were operating with a total working population over 37,000, of whom approximately 70% were migrants from remote villages in and outside of Lamphun. Nearly 80% of the total population of the NRIE was female, with the majority under the age of 30.

The northern region and the upper north to which Lamphun belongs have been particularly heavily impacted by HIV/AIDS. From 1984 to 2003, the reported number of AIDS cases in the upper north constituted nearly 23% of the national total.[9] In Lamphun, after the first four AIDS cases were reported in provincial and district hospitals in 1989, the number of reported AIDS cases increased rapidly from five in 1990 to 968 in 1996, and then fell to 393 in 2002.[9] The cumulative number of reported AIDS cases in Lamphun as of August 2003 was 7143.[9] The ratio of women to men was about 5 : 1 from 1989 to 1999, but fell to about 1.5 : 1 from 2000 to 2003. From 1989 to 2003, nearly 77% of the persons affected were those in the 20–39 year age group and about 90% of the cases were due to heterosexual transmission. Occupationally, nearly 65% of the cases affected general employees (*rapcaangthuapai*), to which factory workers belong.[9]

There are few reliable studies on HIV/AIDS prevalence among factory workers at the NRIE, but all of them suggest that the HIV risk among factory workers is not negligible. In a 1994 survey by the Office of Communicable Disease Control Region 10 (CDC10) of volunteer factory workers (106 men and 393 women), mostly working at the NRIE, seven of the 106 men and five of the 393 women were HIV positive, for an overall prevalence of 2.4%.[10] Another study conducted in 1999 by the Lamphun Provincial Office of Public Health (LPH) and CDC10, as part of a community health surveillance project in Lamphun, found that five of 127 factory workers (3.9%) were HIV positive.[11] In 2002, informal interviews with personnel managers of seven purposely selected Japanese companies at the NRIE, with an average number of 2,100 employees, showed more moderate rates of infection—annual reported cases of HIV/AIDS from 1995 to 2000 ranged from two to ten in each company, with the number sharply decreasing after the year 2001. At factories, however, actual figures were hard to determine since some workers quit their jobs without reporting to their bosses after being found to be HIV positive. These reports as well as the existence of a large number of young female migrants at the NRIE have aroused a public health concern about HIV infection. The concern was heightened also by the fact that many of these women stayed apart from their families and some cohabitated with young male factory workers.

Methods

A total of 60 factory women were interviewed in February to March and July to August of 1999. All study participants were single and living in dormitories. Individuals matching these particular criteria were chosen for the reason that the risk of HIV for single migrant factory women had not been accurately investigated. These criteria were also chosen on the presumption that single women living apart from their families would be at higher risk for HIV/AIDS than those who stay with the family. To identify "single"

women, the author asked each individual if she was currently single without having lived with a man with parental consent. In northern villages, parental consent authorizes a couple's sexual relations and thus signifies marriage. Those women who were in such a relationship were excluded from this study. Some study participants shared a dormitory room with a man, but they did not consider him their husband or obtain parental consent. These women were considered to be single and were included in the study.

Study participants were selected using a snowball sampling method, beginning with three women who had lived in a dormitory in which the author resided during the first period of the fieldwork. I was well acquainted with these women by the time the interviews for this study were carried out. Each of these women was interviewed separately, and at the end of the interview, they were asked to introduce other factory women. These women were then interviewed and asked to introduce other women, and so on. This method regards friendship and rapport as much more important than statistical representation for obtainment of detailed and sincere information. Verbal informed consent was obtained mainly regarding the informant's right to 1) accept the interview, 2) stop being interviewed at any time and for any reason, and 3) at the end of the interview, decide not to allow the information to be included in the study. In addition, the participants were informed about the researcher's obligation to protect their privacy, manage the data safely and inform them of the research results upon request.

Interviews were open-ended with the main items pertaining to the women's sexual partners and practices before and after coming to the NRIE, and their ideas and practices of HIV prevention. Their knowledge of HIV transmission and perceptions of risk for HIV infection were also determined. All interviews were conducted by the author and a 27-year-old Thai female graduate student who had lived in Chiang Mai for more than 10 years and had substantial knowledge of health and social science. All interviews were tape recorded and transcribed verbatim by a skilled transcriptionist, and then translated into English. The English transcription was coded and categorized with the help of a qualitative data management program (The Ethnograph[12]).

Data analysis focused on the women's sexual relational status and methods of HIV prevention they currently used or were going to use in their sexual relations. Since none of them had or expected to have sexual relations with other than a stable partner, such relations as casual, multiple, commercial sex were not considered in this study. It is important to note that these particular interviews were part of my larger and more in-depth ethnographic study of factory women from February 1997 to March 2000 at the NRIE and surrounding villages, and also follow-ups in March and August of 2002. It consisted of general immersion in the local context (participant observation and miscellaneous data collection) during the first two years, and more direct investigation of factory women's everyday life, social relations, and general health status by in-depth interviews and informal discussions in subsequent years. The data obtained in the overall ethnographic study became the basis on which analysis and interpretation of findings of the particular interviews were done. In other words, the ethnographic findings provided the author with plentiful information about the social and cultural context of ideas and behaviors of factory women, and thus helped her to explore the deep meanings of their statements and narratives on HIV prevention.

Results

1. Basic Sociodemographic Characteristics

Basic sociodemographic characteristics of study participants are presented in Table 1. Most (n=47) of the study participants were between the ages of 19 and 30. An overwhelming majority (n=58) came from the northern region, and most women (n=44) had graduated from secondary school. Most individuals (n=52) worked as operators or manual workers, and the duration of work was relatively short. Aside from my partial sampling exclusively of single women living in dormitories, the study participants represented the general characteristics of factory women at the NRIE.

2. Sexual Practices

Table 2 presents the state of sexual relations of the study participants cross-tabulated by the presence of a boyfriend. A small number (n=6) of women have had sexual relations, all of which were with a man whom they considered a "boyfriend." None of them reported having had sexual relations with men whom they did not know. Approximately half (n=29) of all women had or used to have a boyfriend, but none of them had sexual relations. A slightly lower number (n=25) of women had never had a boyfriend or sexual relations.

The situation of premarital sexual status of these women contrasted sharply with various reports attesting to the declining age of the first sex and increasing rate of casual sex among Thai youths. For instance, several quantitative studies of sexual behavior of Thai students have shown that almost half (43%) of the female students reported having had sexual relations,

Table 1 Sociodemographic characteristics of study participants

Characteristics	Participants (n=60)
Age (years)	
Under 20	11
20 to 24	28
25 to 29	19
Over 29	2
Median	23
Mean	23.1 (STDV 3.6)
Region of birth	
North	58
Northeast	2
Educational achievement	
Primary school	3
Secondary school (9th grade)	21
Secondary school (12th grade)	23
Vocational school (2 years)	6
Vocational school (4 years)	4
University	2
n.a.	1
Working status[a]	
Group leaders	6
Operator	52
n.a.	2
Duration of work (years)	
Under 2	18
2 to 4	28
Over 4	13
n.a.	1

[a] In factories at the NRIE, female employees are normally divided into three kinds of jobs—group leaders, operators and clerks. Group leaders do supervising work and operators do assembly work on production lines.

Table 2 The state of sexual relations of study participants by the presence of a boyfriend

	Boyfriend		
Sexual relation	Have	Used to have	Never had
Have	6	0	0
Used to have	0	0	0
Never had	17	12	25

with the mean number of lifetime sexual partners being 2.6.[6,7] Still, it would be too hasty to conclude that Thai young women are sexually active, since these studies often survey vocational school students whose sexual behavior has become a target of AIDS research, and the results may not be representative of the whole population of Thai young people. Some reports also dispute the findings of these studies. For instance, two of the past reliable studies on single factory women's sexual behavior reported that only 5.2% and 9% of their survey samples had sexual relations, respectively.[13,14]

It should also be noted that the prevalence of premarital sex is hard to assess in Thailand, where there is no clear-cut difference between being single and married. In Thailand and rural regions in particular, marital and non-marital status are largely dependent on the perception of the parties concerned, and the presence of a marriage ceremony or marriage certificate is neither a necessary nor sufficient condition to infer the marital status. This makes the concept of premarital sex vague. Related to this is ambivalence in the distinction between the categories of sexual partners, such as boyfriend, lover and husband, since all of them are expressed by a single term, *faen*. In some surveys, therefore, the statistics on sexual practices of single and married persons are amalgamated, obscuring the reality of premarital sexual behavior. For instance, a summary report of sentinel surveillance for HIV risk behavior of adolescents and young people (15–29 years old) from 1995 to 2002 by the Ministry of Public Health has shown that during the study period, 60–65% of factory women who participated in this surveillance reported having had sexual relations, but that this sample included both single and married women, with the latter representing nearly 56% of all factory women.[15] Thus, we lack validated information as regards the prevalence of premarital sex among young people in Thailand.

Nonetheless, the participants in this study may not be representative of the population from which they are selected. The proportion of sexually active women may be underreported in this study, partly because such women may have felt reluctant to talk about private life and therefore stayed away from the author throughout the study period. The author's close relations with a particular group of women, who happened to be less sexually active, may have been a hindrance to in the investigation of the sexual behavior of wider groups of women. It should be noted, however, that qualitative methodology was not employed to assess the actual prevalence of premarital sex among factory women, but rather to explore their perceptions and attitudes relating to premarital sex and HIV prevention behavior.

3. HIV Prevention

The ideas and HIV prevention practices of the 60 factory women varied, but two major orientations emerged from the interviews—mutual love, trust and fidelity and abstinence. Various other strategies, which I call soft strategies, fell between the two. Three concepts that were found to be helpful to analyze the ideas and feelings behind the particular strategies the women selected were self-image, trust and self-reliance, and their social and cultural dimensions were particularly important. In Table 3 I have summarized the different responses to HIV/AIDS among the 60 factory women characterized by the way they developed their self-images, trust and self-reliance. They will be described in detail below.

3.1. Mutual love, trust and fidelity

Mutual love, trust and fidelity, often expressed in the phrase, "*rak diaw chjai diaw*" (be faithful to one love), is a modern sexual norm common among young factory women at the NRIE. Those who embrace the modern norm do not deny having premarital sex, but believe that sexual relations must be accompanied by mutual faithfulness, deep bonding and sincere affection for one another. They also believe that they can counter HIV/AIDS by maintaining this ideal sexual relation, in which they trust a partner and are totally dependent on him.

In my interviews, 15 of the 60 factory women believed that couples who are in a state of mutual love, trust and fidelity do not need to practice any HIV prevention. Four of these 15 women had boyfriends with whom they had sexual relations but did not use any form of prophylaxis. One of them came to the NRIE five months before and lived with her boyfriend, who was also a factory worker and had been there for two years. They were classmates at a high school in Uttaradit province and had known each other for five years. When asked about HIV prevention, she said :

> *I am not afraid of AIDS, because I can trust my boyfriend. He does not like going out to see other women. We have talked with each other about AIDS, and he promised that he would never go to see other women.*

Another woman who had sexual relations for several years with a man in the same factory also stressed mutual fidelity in their relations, and believed that both condom use and blood tests are for women who were promiscuous :

> *If we do not trust our boyfriends, we do not have sex. We have sex with a man whom we can trust, so that we do not use condoms. One of my friends went to have a blood test three times before having sex with her boyfriend. This is unusual for women. She must have had some problems in the past.*

Still another woman rejected the idea that women should talk about sex and prevention openly with men, and neither practiced nor suggested prophylaxis in her relationship with her boyfriend, whom she had associated with for the previous one year at the NRIE. She strongly believed that such actions would run the risk of their being suspected of having many sexual experiences, thus bringing shame on herself unnecessarily. In intimate relationships, the feeling of trust and a sense of being a respectable woman override the fear of HIV infection, discouraging these women from actively pursuing HIV prevention.

On the other hand, the idea of mutual trust, love and fidelity has the potential to control HIV infection effectively. The factory women believed that the idea of mutual love and trust could reorient the present unequal social norms regarding men's and women's sexual

Table 3 Responses to HIV/AIDS of study participants

Strategies	Self-images	Attitudes towards one's partner/men in general	Self-reliance
Mutual love, trust and fidelity	Modern	Trustful	Low (Partner-reliant)
Abstinence	Traditional	Suspicious	High (Self-reliant)
Soft Strategies[a]	Ambiguous[b]	Mixed[c]	Intermediate[d]

[a] Warning one's partner about HIV risk, talking about prevention, monitoring one's partner's behavior, and so on.

[b] Some wanting to be both modern and traditional, others standing between them.

[c] Having mixed feelings of trust and suspicion.

[d] Standing between being self-reliant and partner-reliant.

behavior and thus promote safer and more equal sexual relations in the long run. In the more immediate term, they did not want to damage their sexual relations or endanger their ideal of mutual love, trust and fidelity ; rather, they tried to believe in their partners' fidelity and in so doing could sustain their dignity and an ideal self image as respectable women in northern Thai society. Therefore, they insisted that responsible sexual behavior and mutual love are the first and foremost factors in preventing HIV infection and also in sustaining their self-esteem.

However, until such an ideal gender relationship is publicly achieved and supported, young women remain in a vulnerable position vis-à-vis HIV infection because of their dependence on the partner's fidelity. In fact, the modern idea of romantic love becomes a blindfold preventing women from realizing their dependent status. Moreover, precisely because such an ideal state does not last permanently in many premarital sexual relationships they have to take other measures when necessary. The most common strategy is to end the relationship. Interviews with several women who previously had boyfriends revealed the fact that some of them rarely asked their partners to use condoms in sexual relations with them or in a commercial sex context. They simply stopped having sex if they found that their partners had sex with other women, and in many cases stopped associating with them. They preferred to end the relationship rather than to endure or complain about the partner's promiscuity. This does not mean that they abandoned their ideal of mutual fidelity, but that they tried to find a better partner with whom they could nurture an ideal sexual relationship.

3. 2. Abstinence

Abstinence from sex is a common HIV prevention strategy for young factory women. In my interviews, the majority (n＝54), including those who had a boyfriend at the time of the interview, refrained from having sex. There was a general consensus among these women that they were safe insofar as they abstained from sex. But only three of them did so intentionally, and others simply regarded abstinence as a possible method.

For those women who advocated abstinence, it was not only an intentional action aiming to prevent HIV infection but it also embodied their conservative sexual ideas. They shared a negative view towards premarital sex, considering that women lose their virtue (*sia tua*) and disgrace their ancestral spirits (*sia phii*), and believed that noninvolvement in any form of sexual relations was one way to protect the family and their own honor. They perceived premarital sex as risky for young women both physically and socially and beyond the HIV risk, because it would bring about various other kinds of risks such as unwanted pregnancy, desertion by men and a family member's illness as a result of violating conventions. One of them elaborated this point :

> *Without having a promise to marry, we should not to engage in sexual intercourse. Women lose virtue in casual sex and face many risks, such as pregnancy, sexually transmitted diseases and public shame. Our society will never condone such women.*

In northern Thai villages, if an unmarried man and woman are found to have had sex, the man has to take responsibility by marrying the woman and paying a fine or making a sacrificial offering to the spirits. If the man refuses to marry, he has to pay double the amount required for marriage.[16] Otherwise, the members of the woman's descent group are said to fall ill. Factory women who believed in this tradition were afraid of being deserted by their boyfriends and troubling their families as a result of offending the spirits. One of my interview participants noted a story of her colleague who offended the spirits by aborting a baby :

> *She went to a clinic in Chiang Mai. Women can abort babies there by paying 1,000 baht for a one-month pregnancy and 2,000 for two months, and so on. Her boyfriend throw money to her, 2,000 baht or so, hoping to end the relationship. Giving her money to end the relationship means her boyfriend did not love her at all. She then decided to abort the baby. On her way back from the hospital to her dormitory, she stumbled and hurt herself. I think the spirits chased after her.*

Their advocacy of abstinence is contrary to the pubic image of factory women as sexually active and promiscuous. They actually strictly followed conventional sexual norms for women in Thai villages, in which sexual activity is negative for women except for reproductive purposes. Women are not even expected to reveal their desires to know about sex or express their affection towards men. This conventional idea is best illustrated in the case of one factory woman. Her mother was a health volunteer in her village in Chiang Rai, and taught her basic knowledge about AIDS sometimes by showing condoms she got from a health post. While acknowledging this fact, she refused to obtain further in-depth information about sexual matters, saying that it was inappropriate and dangerous for young women to seek such information. She had a strong belief that men in general are selfish womanizers who do not care about safety or a woman's reputation, and insisted that women should refrain from associating with men.

This example also illustrates her suspicion of men's sexual behavior and her self-reliance in guarding her

safety and reputation. In traditional northern villages, young women are taught by their older female family members that men are deceptive and cannot be relied upon. Where matrilineal spirit cult belief long supported the matrilineal residence pattern and ensured relative female autonomy and power, men and women's relations in general were tense, mistrustful and even dangerous.[17,18] Those who determined to abstain from sexual relations maintained this traditional attitude towards men. One of them, a 19-year-old from a village in Nongkhai, was shocked to see multiple sexual relations among her male coworkers and disheartened by one of them who half-jokingly asked her if she was still virgin. This happening taught her not only the prevailing negative imagery about factory women at the NRIE but also the persistent practices of male sexual philandering, thus strengthening her conservative view. These women's conventional sexual attitude is a survival strategy against such unequal sexual relations and also an active reaction to the negative imagery.

3.3. Soft strategies

Many subtle ideas and practices regarding HIV prevention among the factory women fell between the aforementioned common, but rather polarized, measures. They form a set of multiple behavioral methods of prevention, selectively used by the factory women depending on the state of the sexual relationship, risk perceptions and their perceived efficacy in implementing them. I call them "soft strategies" that stand between the measures of mutual fidelity and abstinence.

The most common method my informants mentioned was to warn their boyfriends of the risk of HIV infection in commercial sex encounters in various ways. For instance, they talked with their boyfriends about the value of trust and fidelity, told them to stop going out, urged them to use condoms supposing they go to see other women, and so on. One of them, a 21-year-old having a sexual relation with her boyfriend adopted this method and said :

> *I warn him of the risk of AIDS at every opportunity. I used to participate in factory AIDS education and learned that we have a good chance of getting infection at the NRIE. I am very afraid of it. So, whenever I have a chance to talk about AIDS, I usually warn him.*

On other occasions, watching television reports on AIDS and hearing gossip about AIDS cases among their friends and colleagues similarly generated conversation with the boyfriend about AIDS.

Despite the persistent influence of conventional sexual ideas that women should refrain from openly taking about sex and sex-related issues, they tried to resort to this "talking" strategy. They were able to do so partly because they utilized it very carefully. A factory woman who had a boyfriend but did not have sex with him, for instance, stated that she usually raised the issue of HIV prevention in a soft and indirect manner, saying such as "I learned that one common way of getting virus is for men to see women in commercial sex. I am afraid this might happen to you." By speaking softly and expressing her sincere worry about his potential risk, she was able to minimize the risk of damaging her honor. Among other soft strategies that are less provocative than warning are being attentive to one's partner, monitoring the partner's behavior, and selecting the partner carefully.

Implementation of particular strategies, including mutual fidelity and abstinence, was not neatly organized or well planned in their actual life situation, but the adoption was correlated to the stage of intimacy. Those who did not have sexual relations were more likely to cite stronger measures for HIV prevention such as abstinence than those who had sexual relations. Mutual fidelity was not a particularly popular measure among these groups, in contrast to the latter group. This suggests that strong intentions to safeguard their health faded after they become intimate and attachment and a feeling of trust had developed. In my interviews, only four women, who never had a boyfriend, actually recognized their personal risk of HIV infection, and the rest of the women denied their personal risk and even their potential risk of infection.

The soft strategies were often used in combination, maximizing the overall effects, and in actual cases, even mutual fidelity and abstinence were not used in isolation. For instance, a factory woman who had a fiancée and was waiting for her marriage until enough money was saved, stated that she monitored him when she could and she also urged him to refrain from going out. Other women told their boyfriends to use condoms with other women once they suspected such behavior, and if necessary refused to associate with them until they were proven to be innocent. Still other women talked about the value of mutual love, trust and fidelity, in addition to urging the boyfriend to be responsible and use protection when going out. Combining various methods for risk reduction resulted in a positive effort for prevention.

3.4. Some consequences found in a revisit

In my follow-up visits to the NRIE and factory women's home villages in March and August of 2002, I was able to locate eight of the 60 informants in this study. It was found that none of them got infected with HIV, but they were not without risk. One of them, who had sexual relations with her boyfriend when interviewed in 1999, was separated from him. The

reason was that he had had a fiancée. It turned out that he treated her as a casual sexual partner. He insisted on continuing the relationship even after she found out the truth, but she finally refused him by intentionally going back to her home village every weekend. Two women had boyfriends but had no sexual relations at the time of the interview, and one of them separated and the other married hers and stayed with him in her home village. Another woman, who had previously had a boyfriend at the time of the interview, went back to her village and found a new boyfriend there. Four women had never had a boyfriend at the time of the initial interview. One of them married a man in her village, and the rest continued to be single without having a boyfriend. One of them was promoted from being an operator to the office staff in 2001, and another bought a brand new three-story commercial building for 800,000 *baht* in a business area in front of the NRIE in 2002. Those who married faced a real risk of HIV and resorted to various soft strategies, of which the most popular one was warning. In addition, one employed more direct methods such as refusing to have sex unless her husband proved his safety by taking blood test, and another developed a mutually trustful relationship and remained healthy.

These findings suggest that factory women's sexual relations are subject to many changes. In such a situation, the state of mutual love, trust and fidelity can be maintained by some women, but might turn out to be illusory for other women, increasing the potential risk of infection. On the other hand, controlling HIV risk by maintaining abstinence is rather easy for the women if they are satisfied with being single and devote themselves to factory work. Married women's experiences also attested to the popularity of soft strategies.

At the NRIE in 2002, factory AIDS education projects organized by the LPH and local NGOs were discontinued, and drug prevention and reproductive health projects took their place. Health and education officers at LPH and local NGOs uniformly mentioned that AIDS was no longer an emergent health issue in Thailand and thus should be merged into a comprehensive and long-term reproductive health project. Meanwhile, drug problems became a serious issue among factory workers so that factories, local police departments and the LPH started a drug control project in collaboration. In this shift from HIV/AIDS to drugs, many projects aiming to control HIV/AIDS among factory workers ceased, providing us with no updated information on the rates of HIV and AIDS of factory workers. The data obtained in the follow-up provide valuable information indicating that HIV/AIDS remains a current issue at the NRIE.

Discussion

HIV prevention among the 60 factory women included various strategies that were selectively used depending on their images of gender and sexuality, whether they trusted in their partners and men in general, and whether they relied on themselves or their partners. Those who perceived and presented themselves as traditional followed the northern Thai village sexual norm and abstained from having sex, whereas those who regarded themselves as modern accepted having premarital sexual relations and advocated mutual love, trust and fidelity. Furthermore, those who were suspicious of men's sexual fidelity and wished to be self-reliant in their sexual and gender relations recognized abstinence as the best strategy. Such a strong intention to safeguard themselves against the HIV risk faded after they had a sexual relationship and a strong attachment to their partners and feeling of trust developed. In such an intimate relationship, they became dependent on their partners with regard to many sexual and health issues, including HIV prevention. Actually, the state and correlation of their self-images, feeling of trust and self-reliance were dynamic, and soft strategies paved the way for many of them to find a compromise between their conflicting desires to trust the partner and to be suspicious of his fidelity, and to be both modern and traditional.

Central to this study is the notion that HIV prevention programs at the NRIE need to understand that diverse approaches or combinations of approaches exist in the everyday risk reduction behavior of the factory women, and that they are shaped by a set of social norms and cultural meanings related to gender and sexuality in contemporary northern Thai society. The way they develop their self-images and cultivate the feeling of trust and reliance towards the partner are all influenced by the social norms and cultural meanings. When the norms and meanings are in the state of flux as with the case of the NRIE where modern and village-based gender and sexual norms coexisted, self-image, trust and reliance are susceptible to constant changes, rendering the women's prevention approaches transformable.

Anthropologists studying HIV/AIDS have long argued the necessity to understand a broad set of cultural meanings related to the gender and sexuality of the targeted population in designing and improving HIV prevention programs. Numerous studies have indicated that cultural meanings shape sexual experience in different social and cultural contexts, with an emphasis on their shared and collective character.[19–26] Their ap-

proaches to HIV prevention thus focus on ideas and behavior not as the property of individuals isolated from their social and cultural context but of social persons who are situated in specific cultural settings. These studies revealed the diversity and complexity of people's sexual behavior cross-culturally, making an important contribution to public health policies, especially in promoting culturally grounded behavioral change. There remains a problem awaiting a solution in that the past studies did little to explore the rich potential of diverse HIV prevention or risk reduction behavior among the lay population and to directly challenge the rationale of mainstay prevention policies, such as promoting condom use, in spite of the fact that many of them attested to the difficulty of young women's adopting the condom strategy.

Since the beginning of the 1990s, an increasing number of anthropological studies focused on structural, political and economic factors to explain women's difficulties as well as many other constraints that other groups of people have as regards HIV prevention.[27–32] They considered the interactive effects of various social factors such as economic deprivation, unequal gender relations, sexual oppression and racism that are associated with an increased risk for HIV infection. These works shed light on the root causes of the HIV/AIDS epidemic, yet much work is needed that goes beyond describing the oppressive situation and explores exactly how interventions into the structural, political and economic factors can take place and whether such macro level intervention is actually possible and effective.

For instance, intervention into the structure of gender inequality is a difficult task, in spite of the fact that the structure that has long existed around the world now frames the context of women's risk.[33] Many anthropological studies have found that women's relatively low socioeconomic status and lack of power are barriers to negotiating condom use with their partners and carrying out prevention effectively.[28,34] The elimination of gender hierarchy and women's liberation remain fundamental issues in HIV/AIDS-related research regarding women. According to liberalist and modernist theories, a social structural change accompanied by economic development and modernization will liberate women and provide them with increasing power to manage their health risks.[35] Women will become self-reliant when wider employment opportunities are available and modern social norms encourage them to work outside the home. Although such structural transformation is much needed, my study points to the critical fact that gender equality is not solely achieved through employment opportunities and thereby increasing economic autonomy, and that in the modern social environment there are various constraints on women's social autonomy.

My data demonstrate that young women at the NRIE become dependent on their male partners when they acquire a modern gender and sexual norm of romantic love and mutual trust. In such a situation in which young women have to recognize love and trust as bases on which they maintain their respectability even after having intimate sexual relations, the women have to be totally dependent on the sexual partner in managing their health risk. This situation differs very much from the traditional northern village society, in which women's sexuality is under the guardianship of their families and communities and they were able to express their suspicion towards young men. The northern village society even punished those who approached unmarried women casually. This suggests that young women would have stronger negotiating power and better health when they stayed close to their communities. Important in any structural intervention is the fact that gender power relations and vulnerability to infection have to be understood within the specific social and cultural contexts.

The significant finding in this study is that young women's efforts to survive by developing various health risk reduction strategies have been overlooked by many interventional approaches which aim to "change" people's behavior or their society. Importantly, their health risk reduction strategies involve myriad social risks and developed in a way to cause few repercussions in their overall social life. The lay knowledge and practices for HIV prevention thus have a high potential to contribute to the development of culturally appropriate and sustainable HIV prevention models. New attention to the lay practices for HIV prevention and various behavioral strategies has been recently emerged among public health professionals.[36] They have found that the unified approach may not be the best and most effective strategy and that alternative and diverse approaches should be promoted to fit the particular life circumstances of the individual. The material presented here supports the view. Specifically, this research has found that a new approach should go beyond structural intervention and actively incorporate lay knowledge and practices, such as soft strategies, as potential resources for prevention into the existing prevention programs.

A related issue is the need to reconsider the concept of women's vulnerability, which often obscures women's negotiating power in their everyday relations with men.[33,37] My study found that trust and love, which have been considered as factors contributing to women's vulnerability to infection or expressing the vulnerability itself, could promote mutually respectful and healthy relations. The strategy of mutual love,

trust and fidelity of course contains risks associated with uncertainty as to the actual will and feelings of the partner. However, some factory women chose this strategy since they believed that they had to establish such a relationship in the long run, especially if they were going to marry. The concept of vulnerability would deny the potential of the strategy of mutual love, trust and fidelity or eradicate the very potential under a unified approach to HIV prevention. Further study is required to assess how and in which situations such a lay strategy actually works, and how the strategy can be combined with other stronger approaches.

Conclusion

Living in a region where HIV/AIDS prevalence is among the highest in the country, factory women developed various HIV prevention strategies. The diversity can be contrasted to the almost uniform strategy of condom promotion adopted by the Thai government and disseminated all around the country. Community-based HIV programs, such as those carried out at the NRIE, followed the mainstream prevention efforts, without sufficiently taking into account the situation of the people in the community. The rising risk of HIV infection among young people attests to shortcomings of the widely recognized HIV/AIDS control program in Thailand. At the NRIE, almost a decade after the first implementation of the AIDS education program, condom use remained unpopular among factory workers. They may not see themselves at risk, but there is potential risk of HIV infection in their sexual relations. It is imperative that the future AIDS education program at the NRIE pay more attention to the women's desires and difficulties as well as social and emotional needs for respect and self-esteem. In so doing, the future program should integrate the women's knowledge and practices into the mainstream prevention efforts and make diverse options available to them.

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