

# Commercial Sex Worker Use Among Male Chinese Rural-Urban Migrants

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**Objective:** To explore HIV/AIDS sexual risk behaviors and specifically the use of commercial sex workers among Chinese male rural-urban migrants. **Methods:** The study design is loosely based on diffusion of innovation theory and examines the hedonistic tendencies of this group. Survey data were collected from male rural to urban migrants by an anonymous questionnaire in 2 Chinese cities. **Results:** A total of 1595 migrant workers were included in this study. At the time of this study,

27.6% had used commercial sex workers, and 79.9% of those did so for the first time after moving to the cities. **Conclusion:** Findings suggest that interventions to reduce use of commercial sex workers should be implemented before or as soon as possible after rural urban males move to urban environments.

**Key words:** HIV/AIDS, China, commercial sex behaviors, rural-urban migrants, hedonism theory, diffusion theory

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In 5 years from 1998 to 2003, the HIV/AIDS epidemic in China had spread to all 31 provinces and 48% of all counties.<sup>1</sup> By the end of 2005, there were an estimated 650,000 HIV cases with 75,000 cases of AIDS. The prevalence rate was 0.05%. There was emerging evidence that the number of sexually transmitted HIV infections was increasing and HIV/AIDS was spreading from high-incidence groups to the general population.<sup>2,3</sup> Commercial sex workers were considered to be a high-incidence group with the estimated infection rate ranging from one to nearly seven percent in some areas.

The epidemic of HIV/AIDS in China appeared to be linked with a social phenomenon. In China, for many generations rural residents were restricted through the household registration or *hukou* system. The *hukou* is basically a resident permit given by the government of China. It is issued on a family basis. Every family has a *hukou* booklet that records information about the family members, including name, birth date, relationship with each other, marriage status, marriage partner, address, and employer. In the past people were required to remain in the area where their *hukou* was issued. It has only been within the past 2 decades that these restrictions were relaxed and rural residents were able to move to urban areas for more and better jobs.

The estimated number of rural to urban migrants increased from 50 million in 1990 to 121 million in 2000. It was projected that there would be 160 million rural to urban migrants by 2010, representing approximately 25% of the active Chinese labor force.<sup>4</sup> Studies have con-

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firmed that in other countries<sup>5</sup> as well as China<sup>4,6</sup> rural to urban migrants, especially male migrants, were a high-risk group for HIV/AIDS sexual transmission.

In rural China, traditional beliefs are strong, people have rigid sexual attitudes, and most believe sex should occur only within marriage. In urban areas, however, for the past 3 decades coinciding with the implementation of social reform and open market economic policies, people's perceptions about lifestyle and sex have rapidly changed. Extramarital sexual behaviors including involvement with commercial sex workers have been rapidly increasing. When rural to urban migrants come to this new urban environment, the opportunity to be involved in the commercial sex trade is completely new for them.<sup>7</sup>

Using a new application of the diffusion of innovation theory, this study will explore the use of commercial sex services by rural to urban migrants.<sup>8-10</sup> Diffusion of innovation theory explains how new ideas or behaviors are introduced into, spread into, and ultimately accepted by a community. In the diffusion of innovation theory, an innovation is defined as "an idea, practice, or object that is perceived as new by an individual or other unit of adoption."<sup>11</sup> We contend that first exposure to the idea of commercial sex services is indeed an innovation for rural to urban migrants in China. As Rogers noted, "It matters little, so far as human behavior is concerned, whether or not an idea is objectively new as measured by the lapse of time since its first use or discovery. The perceived newness of the idea for the individual determines his or her reaction to it. If the idea seems new to the individual, it is an innovation."<sup>10</sup> Further, the diffusion of innovation theory has considered an innovation to be something that is essentially good and that individuals should adopt. There were no uses of diffusion theory in the literature that studied the diffusion of a negative behavior or innovation. It would seem, however, that a negative innovation such as the use of commercial sex services might be adopted by a population much the same as a positive innovation.

Sexual behaviors typically involve a pleasure-seeking motivation and are related to personal values and lifestyle. Accordingly this study evaluated the influence of hedonism-seeking beliefs as

potential determinants of commercial sex worker use among early adopters. The hedonistic lifestyle is devoted to the pursuit of instant gratification - an ultimate societal value.<sup>11</sup> Highly hedonistic people are likely to work less and have a high need for enjoyment.<sup>11,12</sup> The literature indicates that hedonistic beliefs are associated with sexual risk behaviors, including the use of commercial sex workers.<sup>13-16</sup> Although rural people may have strong traditional values and rigid attitudes, they also have high hedonistic tendencies. They work hard and feel they deserve fun and pleasure when they can get it. They may consume large amounts of food and alcohol and socialize with friends. The rural culture embraces this sensual consumption, which is in contrast to the ascetic Protestant ethic, a term coined by Weber that constitutes the core spirit of modern society.<sup>11,17</sup> Chinese society remains profoundly influenced by this agrarian culture that leans toward being hedonistic.<sup>12</sup> When living in the rural environment there is neither the opportunity nor the social environment to act on hedonistic sexual impulses. When rural migrant workers move to the city, their hedonistic sexual tendencies emerge, and they may be more likely to frequent commercial sexworkers.<sup>7</sup> Further, it appears that this may happen fairly quickly, or using diffusion theory terminology, that there may be a large number of early adopters.

## METHODS

This study employed a multistage systematic sampling procedure to recruit study participants. In stage 1, 2 cities Hangzhou and Guangzhou were selected from the delta area of the Changjiang River in eastern China and the delta area of the Zhujiang River in southern China. These 2 cities were selected because they had fairly open policies concerning migration and had some of the better-developed economic systems in China; thus, both cities attracted a large number of migrants from rural areas. Guangzhou, the capital of Guangdong Province, had a population of 9.9 million, with an estimated 3.1 million migrants, 1.7 million of whom were men.<sup>18</sup> Hangzhou, the capital of Zhejiang Province, had a resident population of 6.2 million, with an estimated 2.0 million migrants of whom approximately 1.2 million were men.<sup>18</sup>

In stage 2 of the sampling process, 2 districts were randomly selected from each city. Worksites were then used as the sampling units. Six categories of worksites were used to help insure diversity among participants:<sup>19</sup> (1) construction, (2) machinery and transportation, (3) spin electronics, (4) family services, (5) business, and (6) others. In stage 3, a quota-sampling procedure was used to recruit a composite sample approximately proportionate to the overall distribution of the migrant population by occupation clusters. In stage 4 we confirmed that selected participants were rural-urban migrant workers who were aged 18 years or older, held rural *hukou* (that is, were registered residents in a rural area), and had resided in a destination city for at least 6 months. Those workers meeting these criteria were then invited to participate in the study.

### Instrumentation

A sexual risk behavior (SRB) questionnaire was developed for use in this study that had 3 sections and consisted of 13 questions. The first section questioned SRB specifically related to the use of commercial sex workers such as "Have you ever had extramarital sexual intercourse?" If participants answered, "Yes," they were then asked whether the extramarital intercourse first occurred while they were working in the city. They were then asked to further identify how long they were in the city before they participated in the extramarital sex. *Extramarital sexual intercourse* was defined as sex with partners, including occasional partners or friends, lovers, or commercial partners (also called sex workers or *xiaojie* in China). This study examined only those rural to urban migrants who were having extramarital sexual intercourse with commercial sex partners.

Another section of the instrument collected information on several socio-demographic variables. All participants were asked to indicate their birth date, marital status, level of education, and work type.

A third section of the instrument measured the hedonistic tendencies of the participants. Hedonism was assessed by means of a validated hedonism-seeking scale (HSS), which had been previously developed by Yang and colleagues.<sup>7</sup> The scale comprised 4 items: (1) "I like spending my money on eating, drinking alcohol, or pursuing other recreational activi-

ties"; (2) "In order to enjoy life, I have a carefree attitude"; (3) "I do not mind getting drunk if alcoholic drinks are available, since drinking is a way of enjoying life with gusto"; and (4) "The purpose of life is to enjoy myself because life disappears like a dream." There was a standard set of 7 response alternatives for each item: (7) completely disagree, (6) mostly disagree, (5) somewhat disagree, (4) neither agree nor disagree, (3) somewhat agree, (2) mostly agree, and (1) completely agree. A mean hedonism-seeking score was calculated.<sup>14</sup> The internal reliability of HSS for this sample was 0.82 (Cronbach alpha). This instrument had been used extensively in prior research involving Chinese populations with acceptable psychometric properties.<sup>12</sup>

The SRB questionnaire was pilot-tested and revised before it was used for data collection. Sixty-eight male rural-to-urban migrants in Hangzhou were used in the pilot test. They included 31 from building sites, 14 from factory sites, and 23 from commercial and service sites. After they completed the questionnaire, their responses were reassessed using in-depth interviewing. The in-depth interviewing verified 94% of the SRBs identified by the questionnaire. In only one case was there a difference in SRB identification between the questionnaire and in-depth interviewing. Other sex behavior items demonstrated high levels of agreement between the questionnaire and the in-depth interviewing, with correlation coefficients ranging from 0.83 to 0.94 (mean value = 0.89). Demographic items had complete agreement between the questionnaire and the in-depth interviews.

The final instrument required less than 30 minutes to complete. This was determined to be an acceptable time frame for the worksites involved in the data collection.

### Procedures

The Ethics Committee at Zhejiang University Medical Center approved the study protocol. Employers at selected worksites were contacted for permission to conduct the survey on their premises. Forty-seven worksites were contacted, and 35 of them gave permission to conduct the survey. Once permission was obtained, the researchers contacted group "leaders" at each worksite and asked that they encourage their fellow workers to

participate in this study.

All subjects who agreed to participate were given complete and full information about the study and were required to provide verbal consent before they could participate. Once permission was obtained, the questionnaires were completed individually and confidentially in an isolated room or a quiet place. Investigators were present and were instructed to help with any queries from participants. Assistance was provided to those participants who had difficulty completing the questionnaire due to their limited education or reading level. When the questionnaire was completed, investigators checked the returned questionnaires to make certain they were complete. Participants were given a token of appreciation (toothbrush and toothpaste; value US \$0.50) if their questionnaires were acceptable; otherwise, they were requested to fully complete any aspects of the questionnaire that were not acceptable.

### Data Analysis

All survey data were entered into a database using Microsoft Excel. The data were then transferred into SAS (version 6.12) for statistical analyses. Descriptive statistics were run on all items. The cumulative rate of commercial sex initiation was calculated along with the date the migrants came to the cities, and a distribution curve was formed. Chi-square, t-tests were used to compare the characteristics of early adopters and later adopters.

### RESULTS

A total of 1595 rural to urban migrant workers participated in this study. Ninety-five percent of the respondents read and completed the questionnaire on their own whereas 5% required assistance. Of the respondents, 47.9% were from Guangzhou, and 52.1% were from Hangzhou. The mean age of respondents was 29.7 years (SD=7.8). As to education level, 11.0% were at the elementary school level or lower, 52.1% were at the junior high school level, 25.9% were at the high school level, and 10.9% were college level and above. The majority (65.9%) of the participants were married. Of those who were married, 19% were living with their spouse, and 81% had left their spouse in the rural area. Those who had never married or who were divorced or widowed made up 31.6%

**Table 1**  
**Time Distribution for**  
**Initiating First Time Contact**  
**with Commercial Sex Workers**  
**after Moving to the City**  
**(n=255)**

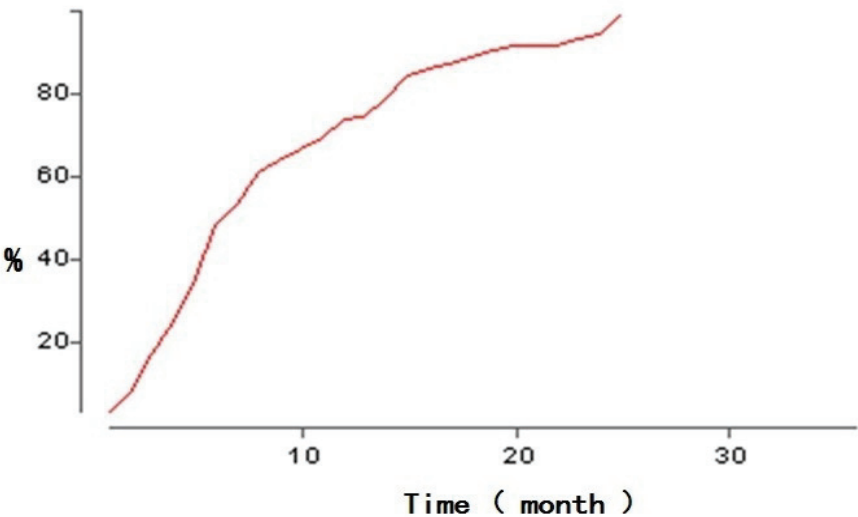
Time (month)	N	Percent	Cumulative Percent
1	8	3.1	3.1
2	12	4.7	7.9
3	24	9.4	17.3
4	20	7.8	25.1
5	24	9.4	34.5
6	37	14.4	48.9
7	12	4.7	53.6
8	20	7.8	61.0
9	8	3.1	64.1
10	6	2.4	67.0
11	8	3.1	70.1
12	12	4.7	74.8
13-24	44	17.3	92.1
25	20	7.8	99.9

and 2.5%, of the participants respectively. Forty-seven percent of participants were in construction, 25.2% in machinery and transport operation, 15.8% in textiles and electronics, 7.9% in business, 2.3% in services, and 1.6% in other areas of employment.

Of the 1595 participants, 319 (27.6%) of the participants had experienced sexual relations with commercial sex workers. Of the 319 who had sex with commercial sex workers, 255 (79.9%) had used commercial sex workers since moving to the cities.

According to Rogers's theory of diffusion, the acceptance of innovation occurs in 5 groupings: (1) innovators – characterized by a slow increase with 2.5% of the population falling into this group; (2) early adopters – again a slow increase with 13.5% of the population in this group; (3) early majority – more rapid increase with 34% of the population in this group; (4) late majority – rapid increase 34% of the population in this group and reaching the saturation point; and (5) laggards – continue to resist innovation with 16% of the population in this group.<sup>10</sup> In this study, only 2 groups were examined. Innovators and early adaptors were combined to form

**Figure 1**  
**Diffusion Curve – Percent Involved in Commercial Sex**  
**by Time in Months**



one group called *early adopters*, and all others were combined to form a second group called *later adopters*.

The diffusion process related to how long after moving to the city it took before rural to urban migrant men began to frequent commercial sex workers. Table 1 shows the time distribution for involvement with commercial sex workers after moving to the city. The initiation rate was 3.1% in the first month, then increased until reaching a peak when 14.4% of participants initiated commercial sex in month 5. Almost half of these men (48.9%) who became involved in commercial sex did so in the first 5 months after moving to the city. By the end of the first year, 74.3% of men who would become involved with commercial sex workers had initiated the behavior, and 91.1% had done so by the end of the second year. Based on these data the initiation of commercial sex behaviors happens fairly quickly after arriving in the city. Figure 1 depicts the diffusion curve for initiation of relations with commercial sex workers over the 25 months covered by the study.

Of the 255 men who initiated sex with commercial sex workers after moving to the city, 44 (17.3%) were classified as early adopters and 211(82.7%) were classified as later adopters. Early adopters were those individuals who initiated sexual activity with commercial sex workers within the first 3 months of arriving in the city, and later adopters were all those who initiated sex with commercial sex workers after being in the city longer than 3 months. Three months was selected as the time frame because previous research had shown that 3 months was needed for most Chinese people to adapt to a new environment and the accumulated prevalence from Rogers’s innovators and early adaptors fits this time frame.<sup>11,12</sup> The characteristics of early and later adopters can be seen in Table 2. These results suggest that early adopters of commercial sex behaviors were significantly more likely to be married and to have high hedonism-seeking beliefs.

**DISCUSSION**

In this study commercial sex use in-



**Table 2**  
**The Characteristics of Early and Later Adopters of Commercial Sex**  
**Among Rural to Urban Migrants**

Group	Early Adopters (n=44)	Later Adopters (n=211)	t ( $\chi^2$ ) value	P
<b>Mean Age<sup>a</sup></b>	30.41(sd=8.91)	29.30(sd=6.46)	t=0.387	0.737
<b>Education Level<sup>b</sup></b>				
Elementary or lower	3(6.8%)	26(12.3%)	$\chi^2=0.105$	0.782
Junior high school	35(79.6%)	131(62.1%)		
High school	5(11.2%)	44(20.9%)		
College or higher	1(2.2%)	10(4.7%)		
<b>Marriage Status</b>				
Never married	27 (13.8)	169 (86.2)	$\chi^2=7.18^*$	0.003
Married/ Divorced/Widowed	17(28.8)	42 (71.2)		
<b>Mean HSS Score<sup>a</sup></b>	3.76(sd=1.83)	4.22(sd=1.87)	t=2.58*	0.005
<b>Work Type<sup>b</sup></b>				
Construction	22(50.0%)	112(53.1%)	$\chi^2=0.811$	0.968
Machinery and transport	13(29.5%)	56(26.5%)		
Textiles and electronics	7(15.9%)	28(13.3%)		
Family service	0(0.0%)	4(1.9%)		
Business	2(4.5%)	11(5.2%)		
Others	0(0.0%)	0(0.0%)		

Note.

a mean(SD)

b n(%)

\* Significant at P<0.01

creased rapidly in the early phase (first 3 months), which is similar to the classical diffusion theory 'S' curve.<sup>9</sup> It would seem that rural-urban migrants quickly and easily employ commercial sex workers once they are available. The urban and rural regions of China are completely different. In the rural areas sexual behaviors are much more restrictive and conservative with little or no opportunity to access commercial sex workers. When rural migrants leave their rural environments and come to the cities, they are often surprised and confused by what they find. They are very curious and eager to try commercial sex.<sup>20</sup> At the same time some rural-urban migrants were middle aged, separated from their wives, and in

an unfamiliar urban region. They still had sexual needs and were easily tempted by commercial sex.<sup>20</sup>

The diffusion-of-innovation paradigm suggests that if potential adopters perceive one innovation as being closely related to another innovation, it may be useful to promote a cluster of innovations, rather than to treat each new innovation separately.<sup>21</sup> Based on the findings from this study, it would suggest that interventions should be initiated before or soon after rural residents move to urban areas, should focus on a variety of SRBs, and should not be limited to just the use of commercial sex workers. It is crucial that prevention efforts target rural school students because many of them

will go to the cities to work and will be tempted by commercial sex workers. Health education efforts could help these young men to understand the risks associated with the various sexual behaviors and particularly the use of commercial sex workers. It is likely that most of these men would never be exposed to such information prior to moving to the cities. We recommend that the government and school administrators make a concerted effort to raise awareness about prevention of HIV/AIDS and in particular the dangers of commercial sex. HIV/AIDS prevention strategies must be embedded into the current health education curriculum. This must become a high priority to have any chance of reducing the incidence and prevalence of HIV/AIDS in China.

Further, there is a need to hire qualified health education teachers to provide HIV/AIDS prevention education. The problem is that there are very few qualified health education teachers present in the rural areas. It is urgent to conduct system capacity training for rural school health education teachers and to recruit urban health education professionals to go to work in rural areas that lack qualified health education teachers.

In addition to providing sex education in rural schools, interventions should be conducted with rural to urban migrants within one month after arriving in the cities. Many rural to urban migrants are required to take technical and safety trainings prior to beginning employment. As part of this training, HIV/AIDS prevention information including the risks of commercial sex should be mandated. Another intervention might involve the training of natural peer leaders within the rural to urban migrant community to act as educators and role models for others in the community. These peer leaders use both information sharing and social norming to educate and establish expectations within their communities.

Beyond community health education interventions, upstream policy and regulatory interventions should be considered.<sup>22</sup> Opportunities for sex trade should be tightly regulated and moved away from the inner city where rural to urban migrants tend to live. Social programs could be developed that would facilitate rural to urban migrants' moving their wives with them to the city, thus reducing the temp-

tation for sexual involvement with commercial sex workers.

Our findings suggest the early adopters of commercial sex were more likely to be married and have high hedonism-seeking scores. Although those with high hedonism scores might be expected to participate in the commercial sex trade, married men might seem to be less likely to be involved in these behaviors. These married men, however, were accustomed to having regular marital sexual intercourse when they were in their home regions. When they left their family and moved to the city, their sexual life stopped. This made the use of commercial sex workers an attractive substitute. The literature has already reported that divorced and widowed men were more likely to be involved in SRBs, including the commercial sex trade.<sup>22,23</sup> Again health education interventions are needed to fully inform these men of the risks they bring to themselves and their families by participating in the commercial sex trade and other SRBs.

Some earlier studies demonstrate that there is a significant association between hedonistic beliefs and SRBs.<sup>9,13-15</sup> The findings from this study corroborate those earlier findings. A strong hedonistic belief reflects a viewpoint about life and one's ultimate social values. People with high hedonistic scores are likely to work less and have a high need for immediate enjoyment.<sup>11,12</sup> Sex is an enjoyable activity and thus attractive to those with hedonistic tendencies. It is important to develop interventions that advocate safe and healthy sexual activities while emphasizing the dangers of sexual risk behaviors for all rural to urban migrants, but especially to those with strong hedonistic beliefs.

### Limitations

This study is limited by the honesty and memory of the participants. Some participants may have been reluctant to provide accurate information about a sensitive subject like sexuality. Thus, the actual numbers of migrant men using commercial sex workers may be underreported in this study. Also, subjects may have forgotten or guessed the actual time that expired after moving to the city and their use of commercial sex workers. The only SRB this study examined was the use of commercial sex work-

ers, and this study examined hedonism as a related factor only to the use of commercial sex workers. Many other theories and constructs could also be examined that may help explain SRBs and could provide insight to help direct health education interventions.

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