

Sociodemographic characteristics, sexual behavior, and HIV risks of rural-to-urban migrants in China

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SUMMARY Because of China's increasing industrialization over the past two decades, many rural residents have migrated to urban areas but frequently return to visit their home villages. These rural-to-urban migrants are generally young, are better educated than non-migrating rural residents but less educated than their urban counterparts, are most likely employed in venues such as construction sites, factories, and commercial services, are usually separated from their families, and have limited access to health services. Risky sexual behaviors such as premarital sex, extramarital sex, and commercial sex are increasingly observed among rural-to-urban migrants. Some female and male migrants are themselves working as sex workers in urban areas. Although the rates of HIV infection and other sexually-transmitted infections (STIs) are still relatively low in general rural-to-urban migrants, they are rising in migrant sex workers. Increasingly observed risky sexual behaviors and prevalent STIs among migrants strongly suggest the serious potential for an expanding HIV epidemic in and beyond these migrant populations. Rural-to-urban migrants play a critical role in the spread of HIV in China and are an important target for HIV prevention and intervention programs. Such programs should be socially, demographically, and culturally tailored to rural-to-urban migrants.

Key Words: Sexual behaviors, HIV, sexually transmitted infections, rural-to-urban migrants, sociodemographic characteristics

Introduction

Since the report of the first AIDS case in 1985, the epidemic of HIV/AIDS in China has gone through an initial sporadic period, followed by a localized epidemic, and has now reached a stage of rapid growth. No province in China has been HIV-free. The HIV epidemic in China is now spreading from the originally infected groups, injection drug users (IDUs) (mostly minorities) and blood/plasma donors (mostly farmers), to sexually active heterosexuals. Patients infected through sexual transmission are now the fastest growing group, accounting for close to 50% of new infections in 2005. Overall, they represent 43.6% of total HIV/AIDS cases, including commercial sex workers or their clients (19.6%), partners of HIV-infected individuals (16.7%),

and men who have sex with men (7.3%) (1). In the meantime, experts estimate that more than eight million Chinese citizens acquired sexually transmitted diseases (STDs) in 2002, and this figure is growing annually by almost 40%, which is far greater than the official figure of 830,000 STD cases in China in 2002, with an estimated annual rate of increase of 20-30% (2). Given the fact that STD patients are more susceptible to HIV infection and are more infectious once infected with HIV, the hidden pandemic of STDs in China further suggests the potential explosion of HIV infection through the mode of sexual transmission.

The number of reported HIV cases in China totaled about 203,527 by April 30, 2007 (3), but the official estimate of people living with HIV was 650,000 (1). The majority of these individuals were rural residents and not identified (1,4). If there had been no population migration, the HIV epidemic might have been and continue to be localized in rural areas in China. However, the China National Bureau of Statistics estimated that in 2000 there were 121 million migrants in China, 73% of them from rural villages (5). Such

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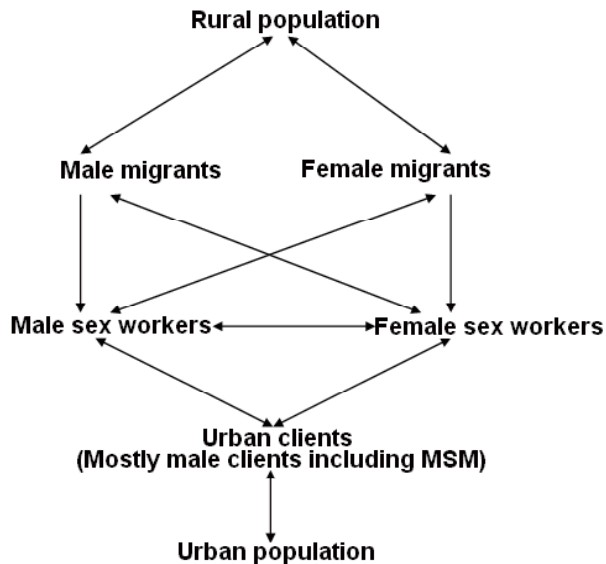


Figure 1. Potential HIV transmission between rural and urban populations in China.

a mass internal rural-to-urban migration might shift the HIV epidemic as a result of broadening social and sexual mixing (6-13).

A great potential for HIV transmission between rural and urban populations and most likely from rural to urban populations is suspected in the current stage of the disease's spread, as rural-to-urban migrants may play a key role in bridging the epidemic between these two populations (Figure 1). Some male rural migrants may buy commercial sex from female sex workers (FSW) in urban areas who are also approached by male urban residents. If clients of either type are HIV-infected, then the virus can be transmitted from one type to the other. Consequently, HIV-infected male clients from both rural migrants and urban residents may transmit the virus to their wives, girlfriends, and other sex partners through unprotected sexual behaviors. Furthermore, if a promiscuous sexual pattern exists among rural and/or urban residents, an HIV epidemic is inevitable in the general rural and/or urban populations. In the mean time, some male rural migrants are themselves commercial sex workers, including those predominantly providing commercial sex to men who have sex with men (MSM) in urban areas. This may open another path for HIV transmission between rural and urban populations (Figure 1). Transmission of HIV and STDs by migrants is one of the most serious public health challenges that China must face and is the most difficult to control.

Careful examination of demographic characteristics, social networks, psychosocial characteristics, and economic status of rural-to-urban migrants as well as their sexual behavioral patterns and trends is needed in order to better understand the role of rural-to-urban migrants in the spread of the HIV epidemic in China. Such knowledge is essential not only to improve the health of migrants but also to protect the public

health of both urban and rural populations. In this regard, this article reviews existing literature on social, economic, and demographic characteristics of rural-to-urban migrants and follows it with existing evidence linking sexual behaviors and HIV/STI risks among and beyond migrant populations. Last, implications of these findings for future social epidemiological research on HIV/AIDS and the design of effective HIV/AIDS interventions are discussed.

Rural-to-urban migration: a fast-growing socially controversial phenomenon

When the Chinese Communist Party took over mainland China in 1949, it imposed external and internal travel restrictions. It established a household or permanent residency registration system (known as "hukou" in Chinese) throughout the country, under which everyone is assigned to a particular place of residence and the Chinese population is officially divided into urban and rural residents. Individuals who wish to move to another part of the country must receive approval from the appropriate authorities to establish another "hukou". The extremely strict permanent residency registration system was closely related to people's social security benefits, residence, education, and working and living conditions. Accordingly, migration was not a common phenomenon until the early 1980s in China. The policy of "Reform and Opening-up" implemented in the early 1980s is what allowed people to move freely and opened urban areas to peasants from rural areas. Although the permanent residency registration system is still valid, it is no longer as closely related to working and living situations as it had been from the 1950s to the 1970s. Therefore, large numbers of people have migrated between different urban areas, and particularly between urban and rural areas, for various economically related activities. The number of migrants has been increasing dramatically during the last two decades, reaching more than 50 million in 1995 and more than 120 million in recent years. The majority of migrants are peasants who left their rural home villages in search of better economic prospects in economically developed cities such as Shanghai (the adopted home of an estimated 5 million migrants).

The migration of large numbers of rural people to urban areas has been controversial and vigorously debated in terms of benefits to the social and economic development of China. On the one hand, the migration has considerably accelerated urbanization of China and made tremendous contributions to social and economic development of both source and destination areas. Many migrants are now working in construction, community services, and commercial services in cities, which are essential to the life and development of cities, but work in these fields is usually laborious, dirty, and low-paid, so permanent city residents are

very reluctant to take such jobs. In spite of low wages, migrants still make a great deal more money than they would had they remained farmers at home and they can save money. Studies have indicated that rural migrants send back large amounts of money to their hometowns every year, which can be a substantial part of the annual finances of local communities and dramatically promote economic development of these rural communities (14,15). By living and working in urban areas, rural migrants may be educated in modern technologies and cultures. When they return to rural areas, these new techniques and modern cultures are also brought to rural areas, dramatically promoting the social and cultural development of such areas (16). On the other hand, the huge numbers of rural migrants in cities has caused many social problems and placed stress upon permanent city residents. The migrants now compete with permanent city residents for limited resources such as certain jobs, public transportation, utilities, housing, and public health services (16-18). Some migrants may be criminals on the run or may become criminals due to unemployment and are consequently regarded as a primary source of urban violence and crime (19-21).

Sociodemographic characteristics and social networks

The main reason that rural people leave their home villages or towns for large cities is the huge gap in economic development between rural and urban areas in China (15,22,23). However, not every rural migrant is accepted by urban society; *i.e.*, urban society selects certain migrants. On the other hand, most migrants carefully select their destination cities based on available information from various sources. Thus, migration is actually the result of two-dimensional selection. Keeping this in mind, some common characteristics of migrants may be discerned. First, from the perspective of source areas, only relatively young and well-educated people have more sources of information about job opportunities, more motivation to look for a better life, greater capacity to work and live alone in a different location, and are thus more likely to profit from their migration. Second, from the perspective of destination areas, young people with better education are more welcome and are thus more likely to be employed in cities.

Age distribution

As noted above, the majority of migrants are young adults. According to a nationwide 1% population sampling survey in 1995, 86% of migrants were between 15 and 65 years of age, and 71% were between 15 and 34 years. Young people in the age group of 20-24 years accounted for 31% of the entire migrant population (24). In Shanghai in 1993, more than half (53.7%) of migrants were 20 to 34 years old. This

proportion was higher in 1997, when it reached 55.4% and was even higher in 1999 (25,26).

Education

Although rural migrants are less educated than their city counterparts, they are relatively better educated than those staying in their home villages and tend to have a higher education level than the overall average nationwide. Based on the same nationwide 1% population sampling survey in 1995 (25), 17% of migrants were educated to high school or college level, while only 11% reach this level among rural populations. Forty-one percent (41%) of migrants had been educated in secondary schools, while only 31% attained this level in rural populations. However, there was still a large proportion of migrants (42%) who were illiterate or had primary schooling only, although this proportion was significantly lower than that of the entire rural population (58%). In an study of migrants in Shanghai, 12% of migrants were educated to high school or college level, 48% to secondary school level, and 28% to primary school level, with the remaining 9.1% of migrants being illiterate or semi-illiterate (27).

Gender distribution

A deep-rooted cultural belief in rural areas of China is that females are usually housekeepers, so they typically receive less education than males and are expected to stay at home. This is reflected in the disproportionate amount of migration between males and females. The gender ratio among rural migrants was 258 males to 100 females, while the overall gender ratio is 108 to 100 in rural areas (24). A study in Beijing revealed that as many as 77% of migrants were males (22). This was also true in Shanghai, where 62.9% of migrants were males in 1997 and 65.5% in 1999 (24,25). However, in certain working venues, such as some clothing and toy factories and some electronics companies, female migrants are usually more numerous than males. For example, about 78% of the workers in processing factories in an economically developed city (Dongguan) of Guangdong province were females (28).

Marital status

Previously, there was general agreement that there are more married than single males but more single females than married females among the migratory population. There were two main reasons for this phenomenon. One was that once married, females would usually stay at home in the countryside to give birth or to take care of the family unless a woman's husband needed her help, which most likely occurs when the couple operates a small business or a grocery shop in the city; on the other hand, husbands are expected to work hard outside

the home and save money for the family. The second reason is that some private enterprises or industries exclude or do not welcome married females for employment. According to estimates of the government of Guangdong province, about 45% of female migrant workers were aged 15 to 19 years in 1990 in Dongguan, a city near the capital of the province. These young females were most likely single (28).

These observations may be no longer relevant now. A study on migrant workers in Shanghai indicated that nearly 40% of migrant workers are single, and this proportion was the same for males and females (26). Observations indicate a rapid rise in the proportion of married individuals among migrants in recent years.

Residency period

Migrants now tend to reside longer in their destination cities than ever before. In Shanghai, the proportion of migrants who have lived in Shanghai for more than six months increased from 49% in 1993 to 70.1% in 1997. More than 36% of migrants had resided for more than one year. In addition, about 46% of migrants in Shanghai hoped to work and live there permanently (26). In Beijing, about 54% of migrants had resided for more than six months, and 23% had resided for more than a year. Nearly 50% of migrants expressed a strong willingness to permanently reside in Beijing (22). In a sampling survey in Beijing in 1999, 69.4% of migrants had lived in Beijing for more than six months (29). A similar trend has also been observed in Guangzhou, the capital city of Guangdong province in southern China, which is a major destination city for rural migrants (30).

Occupation

The number of migrants who have found employment has been increasing along with the increasing number of migrants arriving in the cities and the proportion of migrants who are employed in cities. These migrants predominantly work in agriculture and receive low wages. However, there is a clear trend toward more and more migrants entering occupations with higher wages (23), such as in construction, factories, various commercial and community services, house cleaning and babysitting, and self-employment (22,24,31,32). Most of these jobs are so laborious, low-paid, demanding, and/or dirty that city residents avoid such employment. Because of this, migrants are discriminated against by city residents in most settings. Some female migrants have entered into commercial sex services for various reasons, further accelerating such stigmatization (15). In certain cities, the occupation of a migrant is associated with the province that he came from. For example, in Beijing, migrants from Hebei province usually work at construction sites or build houses, migrants from Zhejiang province

usually work in markets or are self-employed in other commercial services, migrants from Henan province usually recycle trash, and migrants from Anhui province usually work as house cleaners, babysitters, or provide community services (24).

Living conditions

Rural migrants usually live in areas geographically separate from the communities of city residents. Rural migrants tend to live amongst people who come from the same province or prefecture in a place or community that is most likely located between suburban and urban areas around a city. They may live in dormitories provided by employers or in rented apartments. The living conditions are usually very poor, with extremely limited bathing or shower facilities. There are only a limited number of public lavatories, which are seldom cleaned. There is very little privacy in such living conditions because migrants usually share a dormitory room or an apartment with other migrants. Security is also problematic, so many migrants keep their identification cards or certain certificates and money in their pockets. They usually only keep a small amount of money and send the rest back home. Most recently, clusters of these migrants, such as "Anhui village", "Henan village", "Xinjiang village", "Zhejiang village", and "Wenzhou (a prefecture of Zhejiang province) village", have sprung up in Beijing, Shanghai, and Guangzhou.

Most likely, migrants live in a joint location or community connecting urban and suburban areas; *i.e.*, in the marginal areas of a city (33-36). By doing so, they are actually establishing relatively isolated communities of their own, which are less likely to be integrated into the communities of city residents. Migrants are thus psychologically resistant to city residents, and city residents tend to regard migrants as intruders or foreigners, which makes migrants feel marginalized and depressed (37,38). Because they work very hard and yet have inferior living conditions, they feel a strong sense of injustice, and migrants have a very tenuous relationship with city communities and residents (38).

Entertainment and recreation

A systematic study or report on the entertainment or recreation of rural migrants in cities has yet to be conducted, but the authors' experience and observations indicate that these aspects depend on the social network of migrants. They may just stay in their apartments and watch TV or play poker, they may visit friends, coworkers, or relatives, or they may go to the movies or visit other public places of entertainment that are particularly appropriate to rural migrants in terms of cost and location. Although less frequent, there are

some young migrants who attend certain training workshops that are potentially useful to them in terms of finding better jobs or improving their lives.

Social networks

The process of migration of peasants is actually a required process of establishing new social relationships or networks to better acclimate to a new environment. Research has demonstrated that the sooner and the stronger a new social network in the city is established, the sooner and better the migrant is assimilated into city life.

Studies on the networking of migrants reveal that homogeneity is an important basis for the establishment of strong ties. Most rural migrants seek other rural migrants as friends in their social networking; only a few migrants seek local city residents as friends or partners. When confronted with difficulties in daily life or work situations, a migrant would most likely ask for help from family members, friends, relatives, and other migrants from their own village. Although less likely, they may seek help from coworkers, employers, policemen, or other local government officials, and possibly, their landlords. The intensity of their relationships is characterized by the frequency of their interactions, which are also an important indicator of trust, with trust being at the core of a migrant's social network. There are two different types of trust in a migrant's network, non-institutional and institutional. Relationships with family members, friends, relatives, peer partners, and coworkers are non-institutional, that is, they are solely based on blood and geographic ties. In contrast, policemen and other local government officials are powerful people in the community and are in a position to solve certain problems in a migrant's life. It is this power that forces migrants to communicate and further establish relationships with them, which are forms of institutional trust. However, non-institutional trust is the most important basis for establishment of intensive relationships. The stronger the intensity of relationships among migrant workers, the more likely their behavior is to be influenced. Some have argued that the primary social relationship is the main component of a migrant's social support network and that such social relationships function more effectively than social organizations in terms of changing social behaviors (39).

Access to health services

One major problem that migrants face is extremely limited access to health services due to limited information about health education and disease prevention available to them, low awareness of health promotion, and low income to pay for relatively expensive health services. In addition, they may

encounter linguistic and psychosocial barriers to health services. Most migrants do not have health insurance. Therefore, when they are ill, they either choose to stay at home and treat themselves or go to an unqualified private clinic most frequently operated by another migrant who is probably poorly trained. If the illness is severe, they would most likely go back to their own hometowns or villages, where they could receive much less expensive treatment.

This can be particularly problematic for female migrants because many are of child-bearing age but lack access to the family planning system. A study conducted in Shanghai in 1999 indicated that the number of reported abortions among female migrants was 56,400, which was 5,400 more than that in 1998, and accounted for 26.17% of the total number of abortions. Notably, among the 56,400 cases, 29,300 were for married women and 27,100 were for unmarried women (26). The actual situation might be even worse, clearly demonstrating the importance and urgency of improving public health among migrants, and particularly females.

Because of low income or social security benefits, migratory status, and particularly because of low awareness of the importance of having children vaccinated, as well as a lack of knowledge of health facilities providing vaccination services, receipt of vaccinations among migrant children is generally lower than that among local city children. For example, the overall vaccination rate in the city of Suzhou, a wealthy city of Jiangsu province, which is very close to Shanghai, of four basic vaccines (bacille Calmette Guerin (BCG), oral live poliovirus vaccine (OPV), diphtheria-pertussis-tetanus (DPT), and measles vaccine (MV)) in 1999 was only 33.93% among migrant children aged 0-6 years, compared with an overall rate of more than 99% among local city children (40). In the city of Zhengzhou, the capital of Henan province, the vaccination rate among migrant children was reported to be 55.18% for BCG, 52.2% for OPV, 52.38% for DPT, and 48.93% for MV, with an overall rate for these four vaccines of only 32.13%, significantly lower than the overall vaccination rate of 99.1% among city children (41). In certain other cities, the situation has improved due to the tremendous efforts of health workers in those cities. For example, in the city of Guiyang, the capital of Guizhou province, the vaccination rate for all four basic vaccines was over 86% among migrant children. After active outreach to migrants, the vaccination rate for MV was even as high as 95.42% (42). In Beijing, a study indicated that the vaccination rates among migrant children were 77.8% for BCG, 83.2% for OPV, 82.7% for DPT, and 81.6% for MV (43). In Guangzhou, the capital of Guangdong province and the city with largest number of migrants, the vaccination rate for each of the four basic vaccines was over 90% among migrant children (44). Although

the vaccination rates among migrant children are much higher in these cities than in others, they are still relatively low compared to those among city children. Thus, much attention has to be paid to the improvement of vaccination rates among migrant children, as well as to the general public health of migrants.

Sexual behavior and HIV risks

In HIV research, there is a consensus with a growing body of work documenting the effects of migration and health (7,8,45,46). China's rural-to-urban migrant population has been repeatedly characterized as the tipping point for the HIV epidemic in China by the Chinese government and international societies (1,46). The difficulties of conducting HIV surveillance in this extremely volatile and marginalized population have been documented (47). Multi-city HIV surveillance data between 1995 and 2000 show that over two-thirds of the HIV cases involved rural-to-urban migrants. Eighty-five-point four percent of Beijing's and 74.4% of Shanghai's new HIV infections were found among migrants in the year 2000 (47).

Sexual behavior and HIV risks among typical migrants

Most rural-to-urban migrants are at an age where they are sexually active. HIV risk-taking behaviors such as premarital sex, commercial sex, and multiple sex partnership have often been observed in this population, and condoms are rarely used in these sexual acts. Condoms are even less likely to be used in their sex with spouses or other long-term sex partners. A cross-sectional study among 986 sexually active male rural migrants in Shanghai, China found that the proportion of men who had premarital sex had dramatically increased by year of birth (unpublished data, see Figure 2). In an exploratory study among a convenient sample of migrants including in-transit individuals in Beijing, and peddlers, restaurant workers, and job seekers in Shanghai, Anderson et al. observed that 24% (115/442) of the participants had had sex outside of a monogamous relationship (46). A study of 1,086 typical male migrants in Shanghai indicated that almost 80% of migrants reported that they had never used condoms, and among those who used condoms consistent use was also rare (6). About 11.5% of migrants reported having had sexual intercourse with commercial sex workers and among them, 75% never used condoms and only 16% reported consistent condom use (6). Data from 2,153 sexually active rural migrants in Beijing and Nanjing showed similar sexual risk behavior patterns and indicated a higher level of sexual risk among the Chinese migrant population in comparison to the non-migratory population (48).

However, the picture of HIV/STI infection rates among typical migrants is not as clear-cut. Using a

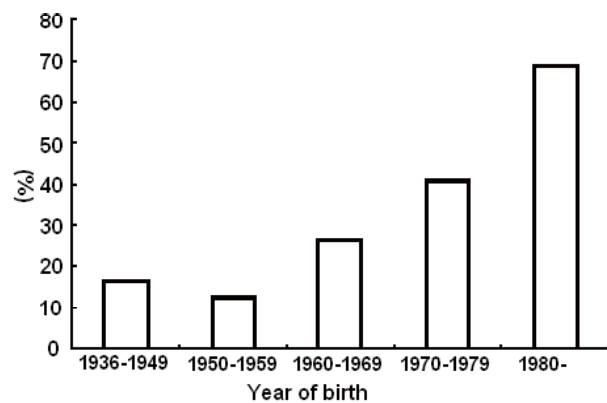


Figure 2. Proportions of having premarital sex by year of birth among male rural migrants in Shanghai, China.

dry-blood-spot technique in a cross-sectional survey among 4,148 migrants and 2,197 urban workers in Hangzhou, the capital city of Zhejiang province in eastern China, Hesketh *et al.* found a prevalence of syphilis of 0.68% among urban workers and 0.48% among migrant workers (49). A urine-based technique in a community-based cross-sectional study of 1,273 male rural migrants in Shanghai found a prevalence of chlamydia, gonorrhea, and syphilis of 3.5%, 0.5%, and 1.0%, respectively (7). Although these rates are low, there were sub-group differences. The prevalence of STDs was 3.2% for construction workers, 5.6% for vendors, and 5.6% for factory workers. Risk factors for STDs were: longer duration in Shanghai, frequent hometown visits, having multiple sex partners, and the desire to have multiple sexual partners. In a study of 1,536 randomly selected market stall vendors (all were rural migrants) in the city of Fuzhou in Eastern China, Detels, Wu, Rotheram *et al.* reported that the prevalence of any STD (based on testing) was 20.1% among those reporting sexual intercourse and 5.5% among those reporting never having had sexual intercourse (50). Among those reporting sexual intercourse, chlamydia was most common (9.4%), followed by herpes simplex II (9.3%). A total of 4.5% among those reporting never having sexual intercourse had herpes infection, but none had chlamydia. Recently, a cross-sectional study among 550 long-distance truck drivers in Tongling city of Anhui Province found about 17.4% of truck drivers had at least one STI: the prevalence of gonorrhea was 8.1%, that of syphilis was 0.7%, and that of herpes simplex II was 4.4% (51).

In sum, the limited set of studies seems to reveal that when using some biological measures for HIV/STIs, the prevalence rates tend to be lower among typical migrants when compared to high-risk populations such as female sex workers. However, studies using self-reported measures tend to have variable HIV/STI prevalence rates among typical migrants. An important point to keep in mind is that a majority of these studies did not use a population-based or sophisticated design (other than a convenience sample) to increase the

generalizability of their findings.

Sexual behavior and HIV risks among female sex workers

Some female rural migrants are working as sex workers in urban areas. They have limited knowledge about HIV/AIDS and do not consistently use condoms in sexual intercourse with both clients and long-term sex partners. Thus, female sex workers are generally at high risk of HIV infection. A cross-sectional survey conducted in Beijing and Nanjing reveals that for 666 sexually experienced female migrants, about 10% of women in the entertainment establishments reported having sold sex, 30% having multiple sexual partners, and 40% having sex with men with multiple sexual partners. The rate of consistent condom use was less than 15% (52). The rates of prevalence of casual and commercial sex for female temporary migrants were found to be 14 and 80 times those for female nonmigrants, respectively. Female temporary migrants' higher unemployment rate and concentration in the service and entertainment sectors are keys to understanding such differences (53). Based on biological examinations, a study conducted among 505 female sex workers in Kunming, Yunnan Province revealed that the prevalence of chlamydia was 58.6%, that of gonorrhea was 37.8%, that of herpes simplex II was 65.1%, and that of syphilis was 9.5% (54).

Sexual behavior and HIV risks among “money boys”

The migrant subgroup known as “money boys” refers to young males who engage in same-sex sexual activities for economic survival. There are only a few summaries and commentaries on this topic (55,56). Mi and Wu quoted Zhang's study on MSM sex workers and estimated there were 380,000 such young male prostitutes in China (55). In a recent commentary in Cell Research, Zhang and Chu argue that the MSM sex trade deserves more attention and investigation (56). Meanwhile, anecdotal evidence suggests that these young prostitutes trade sex for money and drugs; some especially target Western foreigners. To the extent known, there is only one published English empirical study on HIV among these young male prostitutes (57). An ethnographic approach indicated that, compared to typical male migrants, young male prostitutes had a slightly better economic situation, rarely visited their hometowns, used alcohol less but drugs more, and had more knowledge about HIV and STIs, higher HIV/STI testing rates; and fewer HIV risk behaviors (57). However, young male prostitutes who were new to this work were often noted to lack knowledge about HIV and protection. Moreover, many of the young male prostitutes wanted STI testing since they perceived having such an infection as an immediate threat to

their vocation. About one-fifth of the young male prostitutes self-identified as heterosexuals and claimed their commercial sexual activities as purely “business transactions”. This sub-group (heterosexual-identified young male prostitutes) continues to have heterosexual sexual encounters in their private lives (57). Based on the above ethnographic study, a quantitative survey of HIV risk and testing behaviors among 239 self-identified young male prostitutes and 100 typical male rural migrants in Shanghai was conducted. It found that, compared to typical male migrants, young male prostitutes were more likely to use alcohol, had more sexual partners and more casual sex partners, and were more likely to engage in other sexual risks. Both groups had substantial misconceptions about HIV/AIDS and reported low rates of condom use, regardless of who their sexual partners were (58). Moreover, the young male prostitutes were likely to be the victims of sexual violence at the hands of their clients. More than half of these prostitutes had been tested for HIV and 3% self-reported to be HIV-positive, whereas only 1% of the typical male migrants had ever been tested and all self-reported to be HIV-negative (58). Infection with other sexually transmitted diseases was also reported by young male prostitutes (58). Moreover, about 20% of these prostitutes self-identified themselves as heterosexual instead of homosexual man. They had female sex partners while providing commercial sex to male clients (59). Clearly, young male prostitutes play an important role in HIV transmission in China.

Implications for HIV/AIDS prevention and intervention

As demonstrated above, migrants from rural areas are a major part of the migratory population in China and are living and working in marginal and vulnerable situations within cities. This could be a particularly important concern with regard to public health and particularly the prevention and control of HIV/AIDS among the migrant population, which is an emerging public health challenge in China. The migratory status and unstable lifestyle of migrants hinders efforts to reach them with HIV/AIDS prevention and intervention programs. Yet ignorance could be disastrous to the migrant population, which may not only serve as a huge reservoir for an HIV pandemic but may also serve as a bridge for spread of the HIV epidemic between rural and urban populations. This is particularly relevant to China because the majority of identified HIV-infected individuals have been rural residents, among whom the heterosexual transmission of HIV is rapidly increasing. Therefore, a concerted effort should be made to control HIV/AIDS within as well as beyond the migrant population.

Careful examination of migrant society may prove helpful when designing and implementing HIV/AIDS-

related prevention and intervention programs. There is no doubt that migrants are predominantly young adults who are sexually active. Due to long-term separation from family members, loneliness, the strain of work and daily life, lack of entertainment facilities, and lack of essential knowledge regarding HIV/AIDS, migrants are more likely to engage in risky behaviors such as buying commercial sex and engaging in unprotected sex. In addition, their fundamental social norms and rules that previously guided their behavior in their own villages are often abandoned or play only a minimal role in their behavior in a new and more open society. Therefore, they are vulnerable to negative norms or beliefs and engage in risky behaviors in certain circumstances. Moreover, the perception and the fact that they are socially, culturally, and economically marginalized in the urban community makes them more susceptible to HIV infection. However, studies have suggested that HIV/STD prevention activities are accepted among rural-to-urban migrants (60).

Thus, HIV/AIDS prevention and intervention programs that are socio-economically and culturally tailored to the migrant population are urgently needed. Important suggestions or recommendations can be drawn from the current understanding of this special population. First, such programs must provide necessary and sufficient information about HIV/AIDS and healthy behaviors in easily understood formats and languages. Such information must also be disseminated or propagated by appropriate means that are particularly suited to the living and working conditions of migrants. Second, these programs or projects might include sessions that are intended to instruct migrants in how to deal with various barriers to access to health services in cities. Third, these programs must take advantage of the social network of the migrant population and involve close communication between people from both migrant and host city communities. Of particular help would be for project organizers, investigators, or implementers to consult and negotiate with leaders of a wide range of groups that represent various opinions and interests within and beyond the migrant society. Fourth, creation of a "migrant-friendly" atmosphere or environment during the implementation of these programs is crucial. The understanding and support of the host city community is also essential for successful implementation of any HIV/AIDS prevention and intervention project. Fifth, these programs may consider the possibility of providing appropriate entertainment facilities. Last, successful implementation of any HIV/AIDS prevention and intervention program is only achievable through close cross-cultural cooperation between people from various related communities or societies.

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