

## ORIGINAL RESEARCH—EPIDEMIOLOGY

## Factors of the HIV Transmission in Men Who Have Sex with Men in Suizhou City from 2009 to 2013

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## ABSTRACT

**Introduction.** The primary transmission of human immunodeficiency virus (HIV) has been recently changing worldwide. In China, HIV transmission through heterosexual contact remains the predominant mode, but the prevalence of men who have sex with men (MSM) has been increasing.

**Aim.** This article investigated the overall epidemic trend and associated high-risk behavior among MSM in Suizhou City and explored the government's responses to the epidemic.

**Methods.** We conducted yearly cross-sectional behavioral surveillance surveys among MSM in Suizhou City from 2009 to 2013. Participation was anonymous and self-completed. Recruitment methods were consistently applied in each survey.

**Main Outcome Measures.** Semi-structured questionnaire surveys and yearly work summaries were conducted.

**Results.** Most of the MSM groups in Suizhou City were young adults ( $P < 0.05$ ), well educated ( $P < 0.05$ ), and married ( $P < 0.05$ ). Two years after our interventions, we found an increasing trend of condom use during anal sex ( $P < 0.05$ ), as well as commercial sex trade ( $P < 0.05$ ).

**Conclusions.** HIV continues to spread rapidly among MSM in Suizhou City. The high-risk behavior among MSM remains a hindrance to HIV prevention. Innovative intervention approaches are essential for HIV surveillance and prevention among MSM in Suizhou City. **Yang F, Shi X, He W, Wu S, Wang J, Zhao K, Yuan H, Martin K, and Zhang H. Factors of the HIV transmission in men who have sex with men in Suizhou City from 2009 to 2013. Sex Med 2015;3:24–31.**

**Key Words.** HIV; MSM; Intervention; High-risk behavior; Anal Intercourse with Male; Condom Usage

## Introduction

AIDS is a serious public health issue that inevitably delays the development of the global economy, including China [1]. New changes occur along with many challenges as the human immunodeficiency virus (HIV) epidemic continues [2].

According to the 2012 UNAIDS report on the global AIDS epidemic, 34.0 million people were infected with HIV, 2.5 million people had newly acquired HIV infections, and 1.7 million people died from AIDS-related causes by the end of 2011 [3]. The characteristics of HIV epidemic vary in different countries and different regions in the

same country [4]. The primary transmission of HIV in developed countries is through homosexual contact [5–7]. In African countries, it is acquired through heterosexual contact and mother to child [8–10]. In China, HIV transmits predominantly through heterosexual contact, but wide geographic variations of HIV epidemic exist [11]. From 2000 to 2010, HIV prevalence among men who have sex with men (MSM) increases worldwide [12–14]. Baral et al. reported that HIV was more likely to infect MSM than other men of reproductive age in seven Asian countries [12,15]. MSM are particularly vulnerable to HIV because of multiple sexual partners, bisexual behavior, unprotected sex, and lack of awareness on HIV [15–16]. In developing countries, particularly low- and middle-income countries, high-risk HIV among MSM is associated with various sexual partners and unprotected sex [13,15,17].

The China Centers for Disease Control (CDC) has recognized the importance of HIV prevention for MSM and provided targeted interventions for high-risk MSM, defined as MSM with multiple sexual partners. The prevention package includes peer-led outreach education, promotion, distribution of condoms and lubricant, sexually transmitted infection clinical services, community mobilization, and structural intervention [18]. HIV voluntary counseling and testing services are also provided on-site or through referrals.

Suizhou City is located in the northwest of Hubei Province and adjacent to the Tongbai County of Henan Province. Suizhou City has jurisdiction over one district (Zengdu District), one county (Sui County), and one county-level city (Guangshui City) [19]. One of the three locations surveyed, this city is first to have integrated control of the HIV/AIDS demonstration zone in the country, which is supported by the Global Fund AIDS project counties in China. The first case of AIDS in Suizhou City was reported in April 2001 [20]. By the end of September 2008, a total of 582 individuals with HIV/AIDS were reported. HIV transmission was mainly attributed to paid blood donors in the mid-1990s. These individuals live in 17 towns of Zengdu District and 6 townships of Guangshui. Given the increase in population flow and migrant workers, prostitution, MSM, and other populations are considered as the principal sources of HIV transmission in Suizhou City. Sexual contact remains route of AIDS transmission. In addition, many prior studies on MSM

behavior and HIV prevalence had been studied. Thus, it remains unclear which factors of MSM high-risk behavior states facilitate HIV prevalence.

Since 2009, a wide range of HIV interventions among MSM have been introduced through the MSM social organization in Suizhou City and have achieved certain results. However, the MSM who received interventions from our AIDS workers or society organizations' peer educators were infected with AIDS. To elucidate the underlying reason for the increase in HIV incidence in MSM and improve the city's prevention measures, we had one-on-one in-depth interviews with HIV-positive MSM who received AIDS interventions.

### Aims

This study presents the socio-demographic characteristics and HIV prevalence of MSM. The authors investigated the factors associated with HIV infection among MSM and highlighted the need of specific services for this population. We investigated the overall epidemic trend and associated high-risk behavior among MSM in Suizhou City. The government's responses to the epidemic were also explored.

### Method

#### *Participants and Procedure*

Data for this study were obtained through cross-sectional surveys of MSM in Suizhou City conducted from March 2009 to June 2013. All respondents were Chinese male who live in Suizhou City. Eligibility for the study includes (i) over 18 years old; (ii) self-identifying as an MSM or at least has one male sex partner; (iii) receiving primary HIV care at the Suizhou CDC; and (iv) receiving at least one AIDS intervention worker or social organization MSM peer education intervention.

#### *Sampling and Recruitment*

Snowball sampling method was used in selecting the respondents for the surveys. The method was chosen to respect the participants' privacy. This was also in consideration of the major stakeholders of MSM community in Suizhou City. Given the city size and limited resources, snowball sampling provided the optimal accrual method. The seeds for the study represented a diverse set of individuals in terms of age, annual income, and education

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