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Stigma towards People Who Use Drugs: A Case Vignette Study in Methadone Maintenance Treatment Clinics in China

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Abstract

Background—Drug use stigma among service providers has been recognized as a barrier to improving the accessibility and outcomes of addiction treatment. This study examined the stigmatizing attitudes towards people who use drugs (PWUD) among service providers in methadone maintenance treatment (MMT) clinics in China and its associated factors.

Methods—The cross-sectional study used the baseline data of a randomized intervention trial conducted in China, and the data were collected from January 2012 to August 2013. A total of 418 MMT service providers were included in the study. Stigma towards PWUD was measured via a 10-item scale embedded in two case vignettes (PWUD and non-PWUD). The Wilcoxon signed-rank test was performed to evaluate the vignette difference for each item of the scale. The linear mixed model was used to identify the adjusted association between drug use stigma and other interested variables including demographics, professional background, and MMT knowledge of the service providers.

Results—The Wilcoxon signed-rank tests showed that the participants had a higher level of stigmatizing attitudes towards PWUD than non-PWUD (p-value<0.001 for all items of the stigma scale). The linear mixed model identified that the reception of national MMT training was associated with a lower degree of drug use stigma (estimate=−1.79; 95% Cl: −3.13, −0.45; p-value=0.009).

Conclusion—The findings of the study provide evidence of the existence of drug use stigma among MMT providers in China. The expansion of national-level training and the development of stigma reduction interventions are needed to address this issue.

Keywords

stigma; drug use; methadone maintenance treatment; service provider; China

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Introduction

Stigma towards people who use drugs (PWUD) among healthcare providers has been a major barrier to providing addiction treatment services (Go et al., 2018; Otiashvili et al., 2013; Ronzani et al., 2009). Service providers' discriminatory views of PWUD may pose considerable negative effects on both PWUD and providers themselves. For people who are addicted to substances, prejudicial attitudes and stereotypes from service providers may weaken their willingness to access healthcare, hinder adherence to treatment, and compromise health outcomes (Borders et al., 2015; Chakrapani et al., 2014; Mburu et al., 2018). For service providers, their negative attitudes to PWUD may decrease their interaction with patients and reduce adherence to treatment protocols (Li, 2012a; Lin et al., 2018). Meanwhile, the occupational burnout and fatigue of service providers may be increased as a result of working with stigmatized groups (Haug et al., 2016; Morgan, 2015).

The reason behind healthcare providers' stigma towards PWUD may vary. On one hand, drug use disorders are often considered as moral and criminal issues, rather than health problems, by both general populations and healthcare professionals (Livingston et al., 2012; Ronzani et al., 2009). Such perceptions may reduce providers' willingness to offer healthcare services to PWUD (Livingston et al., 2012; Skinner et al., 2007). Previous studies showed that healthcare providers with lower self-transcendence and higher conservative values were more likely to have negative responses to PWUD (Boer and Fischer, 2013; Skinner et al., 2007). On the other hand, prior research identified that lack of adequate education, addiction-related training, and structural support were also associated factors of providers' drug use stigma (National Academies of Sciences, Engineering, and Medicine, 2016; van Boekel et al., 2013; van Boekel et al., 2014).

In China, there were reportedly 2,505,000 people addicted to illicit drugs at the end of 2016, and 955,000 of them were opioid users (Office of China National Narcotics Control Commission, 2017). Since 2004, methadone maintenance treatment (MMT) has become a major strategy to treat heroin addiction and prevent HIV transmission among intravenous PWUD in the country (National Health Commission, 2015; Pang et al., 2007). From 2004 to 2014, the nation-wide HIV prevalence among people who inject drugs had decreased from 10.9% to 6.0% and the proportion of newly diagnosed HIV cases attributable to intravenous drug use had declined from 44.2% to 6.0% (National Health Commission, 2015; Wang et al., 2015). At the end of 2016, there were 789 MMT clinics with 162,000 clients in China (Office of China National Narcotics Control Commission, 2017). Despite its great effectiveness, the current MMT program is facing several challenges, such as dropout and suboptimal treatment satisfaction of MMT clients. At the same time, MMT providers are reported to grapple with occupational burnout, which may be contributed to their negative feelings related to treating patients with substance dependence (Li et al., 2017a; Li et al., 2018; Lin et al., 2010; Wu et al., 2012). To respond to the challenges, understanding MMT providers' stigma towards PWUD is urgent.

Based on our knowledge, previous studies focusing on disease-related stigma among health professionals in China was mostly conducted in general healthcare facilities, but rarely in addiction treatment clinics (Chien et al., 2014; Li et al., 2015; Wang et al., 2017). This study

aimed to assess service providers' stigma towards PWUD in MMT settings in China and to examine its associated factors.

Methods

Study design

The study used the baseline data of a randomized controlled trial. The trial was designed to train MMT providers to deliver individual counseling sessions with their clients to promote clients' treatment engagement. A total of 68 MMT clinics with more than 80 current clients were randomly selected from five provinces in China. The five provinces (Sichuan, Guangdong, Shanxi, Jiangsu, and Hunan) represented the whole country in geography, social economics, and drug use conditions. The baseline assessment was performed from January 2012 to August 2013. The study obtained ethical approval from the Institutional Review Boards (IRBs) of the participating institutes in the U.S. and China.

Study participants and recruitment

All service providers in the 68 MMT clinics, including doctors, nurses, pharmacists, counselors, and clinic managers, were invited to participate in the study. To be eligible to the study, the providers had to be at least 18 years old and currently providing medical services to clients at a participating MMT clinic. When recruiting the participants, a research staff introduced the study purpose, procedures, benefits and risks using a standard script. The confidentiality and voluntary participation of the study were explicitly explained to the potential participants. A total of 418 MMT service providers were recruited in the study, with a respondent rate higher than 95%.

Data collection

After providing written informed consent, each participant was asked to take an individual survey in a private room at the clinic using the computer-assisted self-interviewing (CASI) method. The participant read survey questions shown on a laptop screen and directly entered his/her responses via the laptop. A study interviewer was on standby to answer questions during the survey. Each assessment lasted about 45-60 minutes, and the participant received 30 RMB (approximately 4.7 USD) for his/her time and effort.

Measures

Socio-demographics including gender, age, and level of medical education were collected in the survey. Professional background such as profession (e.g., doctor, nurse, and others), years of working in the medical field and in MMT clinics, as well as whether having received national-level MMT training was also collected from each participant.

The participants' stigmatizing attitudes towards PWUD was assessed via a scale constructed by case-vignettes. The scale was adapted from a scale measuring HIV-related stigma among health professionals in China (Li et al., 2006). In the previous study, the scale showed good feasibility and reliability (Li et al., 2006). The scale consisted of two sets of statements to describe two hypothetical persons (Xiao Zhang as a person who *does not use drugs* and Xiao Wang as a person who *uses drugs*) who both recently lost job and broke up with

girlfriends. For each hypothetical person, the participants were asked to read ten same statements regarding if the person deserves his life adversities, their sympathy and understanding of the person, and their willingness to interact with the person in different occasions. For each statement, the participants rated the level of agreement from 1 (strongly agree) to 5 (strongly disagree), and the vignette difference was calculated by taking the difference in agreement level between the PWUD vignette and the non-PWUD vignette. After reversing the negatively worded items, a summed score of the ten vignette differences was calculated as an index for drug use-related stigma. The range of the scale was from −40 to 40. A higher score reflected a higher level of stigmatizing attitudes towards PWUD (Cronbach's alpha=0.85).

The participants' MMT knowledge was evaluated via 19 true-or-false questions. The questions were originally developed by Caplehorn, Irwig, and Saunders (1996) and adapted by the study team based on the national guideline for the MMT program in China (China National Health Commission, China Ministry of Public Security and China Food and Drug Administration, 2006). The instrument evaluated the participants' knowledge about maintenance treatment goals, patient eligibility, appropriate dosage, management of overdose, and possible side effects of MMT. Sample questions included "long-term treatment with sufficient dosage is a basic requirement for MMT" and "MMT decreases PWUD' risk of dying". The participants scored one point if he/she correctly answered a question. A final score of MMT knowledge (range: 0-19) was constructed by adding up the scores of all questions.

Data analysis

First, the distributions of the socio-demographics, professional background, MMT knowledge score, and stigma score were described. Frequencies and proportions were used for categorical variables, while means/medians and standard deviations (SD)/interquartile ranges (IQR) were used for continuous variables. The crude association between the stigma score and other selected variables was examined via the Kruskal-Wallis test or the simple linear regression analysis due to the skewness of the stigma score. Secondly, to compare the participants' stigmatizing attitudes towards the PWUD vignette and the non-PWUD vignette, the Wilcoxon signed-rank test was used, because the vignette differences did not follow the normal distribution in the study. Thirdly, a linear mixed model was built to examine the adjusted association between the stigma score and other selected variables, in which the province and clinic unit were treated as random-effects factors. We selected the independent variables of the model based on our prior knowledge about potential factors associated with service providers' stigma towards PWUD (Haug et al., 2016; Li et al., 2015; Lin et al., 2018; Ronzani et al., 2009).

Results

As shown in Table 1, over half of the participants were between 30 and 49 years old (n=249, 59.6%), with a mean age of 39.3 years old (median=39.0, SD=11.0, IQR=18.0). The majority of the sample were female (n=265, 63.4%). Approximately one-third of the participants (n=139, 33.3%) received an undergraduate or higher medical degree. Doctors

(n=151), nurses (n=119), and other professionals (n=148) such as pharmacists, accounted for 36.1%, 28.5%, and 35.4% of the sample, respectively. About 58.1% of the participants (n=243) had been working in the medical field for at least ten years, while 73.0% (n=305) had been working in MMT clinics for at most five years. Slightly less than half of the sample (n=201, 48.1%) reported having received national-level training of methadone treatment. The mean score of the MMT knowledge evaluation was 14.0 (median=14.0, SD=2.0, IQR=3.0).

The mean score of the stigma scale was 7.3 (median=7.0), with a SD of 6.7 (IQR=9.0). The Kruskal-Wallis test identified a significant difference between participants with different training experiences, that the participants who had received national-level MMT training reported a lower level of stigma towards PWUD than those who had not (mean score: 6.5 vs. 7.9; p-value=0.020). Other characteristics did not show significant association with the participants' stigma towards PWUD in the bivariate analyses (Table 1).

Table 2 presented the results of the vignette comparisons with the Wilcoxon signed-rank test. All the ten items revealed a higher level of stigmatizing attitudes towards PWUD compared to non-PWUD (p-value<0.001). Among the ten items, the vignette difference was the largest in the item regarding the "difficulties to find a job again" (mean=1.0; 95% CI: 0.9, 1.1; median=1.0) and the smallest in the "unwillingness to provide him services" item (mean=0.1; 95% CI: 0.1, 0.2; median=0.0).

In the linear mixed model, the participants who had received national-level MMT training showed a significantly lower level of stigma towards PWUD compared to their counterparts (estimate=−1.79; 95% CI: −3.13, −0.45; p-value=0.009). Other fixed-effects factors, including age, gender, education, profession (doctors vs. other providers), years of working in the medical field and MMT clinics, and MMT knowledge, did not show significant associations with the participants' stigma towards PWUD (Table 3). The Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) of the final model were 2770.2 and 2766.2, respectively. In addition, when maintaining the two random-effects factors but removing the non-significant fixed-effects factors via the backward selection technique, the association between receiving national training and stigma towards PWUD was confirmed and no other significant association was found.

Discussion

The study provides evidence that stigma towards PWUD may be prevailing among MMT service providers in China. In the comparison of the two case vignettes, the MMT providers showed prejudices to PWUD in all items of the stigma scale. The providers believed that PWUD, compared to non-PWUD, were more responsible for their unemployment and less deserving of sympathy and understanding. They also thought PWUD were dangerous to other people and reported less willingness to interact with PWUD, in both working contexts and daily life. The existence of drug use stigma among service providers in addiction treatment clinics may be explained by sociocultural factors. In China, drug use has been widely considered as a violation of social and cultural norms, rather than a health issue (Li et al., 2012b). Such belief may directly lead to health professionals' stigma and discrimination

towards PWUD, especially for those having higher preferences for tradition values (Boer and Fischer, 2013; Li et al., 2017b). In addition, as most MMT clients in China are intravenous PWUD who are at high risks of HIV and HCV infection, MMT providers' stigma may reflect an aggregation of the fear of contracting infectious diseases at work and prejudicial attitudes towards drug using behaviors (Li et al., 2012b). This study highlights the need for more attention to be paid to MMT providers' stigma towards PWUD in China. It also suggests that future intervention projects in MMT settings should incorporate more components of reducing stigma towards PWUD.

The study found that the participants who had received national MMT training showed a lower level of stigma towards PWUD than those without training. The finding was consistent with previous studies implying that lack of professional training was associated with more stigmatizing attitudes towards patients in drug treatment settings (van Boekel et al., 2013; van Boekel et al., 2014). One of the possible explanations is that, in national MMT training, the concept of harm reduction and MMT's beneficial effect to improve PWUD's social functioning may have been adequately addressed. This training component, to a certain degree, could reduce trainees' negative impressions of PWUD. Moreover, the association between national-level training and providers' stigma could also be explained by the fact that employees with better working capacity and service attitudes are more likely to be granted opportunities to receive high-level training. This finding suggests that the national MMT training needs to be expanded to cover more service providers, while the local-level training should be integrated with more content about stigma reduction. Notably, even the participants who had received national-level training still presented stigmatizing attitudes towards PWUD (mean score=6.5), which implies that training alone is insufficient for stigma reduction and other behavioral interventions to change providers' attitudes towards PWUD are urgently needed.

Unexpectedly, MMT knowledge was not found to be associated with providers' stigma towards PWUD in the study. This finding indicates the existence of a gap between knowledge and attitudes. It adds to the evidence that information alone is not sufficient to change stigmatization, probably because it has little effect on deep-seated fears of being infected with diseases by patients and moral beliefs related to drug use (Brown, Macintyre, and Trujillo, 2003; Li et al., 2006; Pescosolido and Martin, 2015). This finding implies that future service enhancement programs in drug treatment settings should not be limited to knowledge improvement of health professionals. Rather, multilevel approaches to change service providers' attitudes and beliefs towards PWUD, such as contact-based approaches to facilitate interactions between MMT providers and clients as well as involvement of PWUD in the development and delivery of healthcare services, should be incorporated (Livingston et al., 2012; Ti, Tzemis, & Buxton, 2012). In addition, future research to better understand the association between service providers' fear of being infected with diseases at work and their stigma towards PWUD are beneficial to the development of service enhancement programs in MMT clinics.

The findings of the study should be interpreted in light of potential limitations. First, we were unable to draw any causal conclusions between MMT providers' stigma towards PWUD and other interested variables due to the nature of the cross-sectional design.

Secondly, although the participants' responses to the case vignettes were likely to reflect their stigmatizing attitudes towards PWUD, they could not be taken as an equivalence of their actual behaviors in clinical practice. Last but not least, there might be other factors potentially associated with MMT providers' stigma towards PWUD not measured or controlled in the study.

In conclusion, this study reported service providers' stigma associated with drug use in MMT settings in China. To maintain the effectiveness of the MMT program in addiction treatment and HIV prevention, efforts should be made to address health professionals' attitudes towards PWUD. MMT providers' in-service training should be expanded and integrated with specific stigma-reduction components.

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Table 1.

Background characteristics and stigma towards PWUD of the participants

Characteristics	Frequency n (%)	Stigma towards PWUD Mean ± SD [1]	P [2]
Total	418	7.3 ± 6.7	
Age			0.192
<30	90 (21.5)	7.0 ± 6.1	
30-39	131(31.4)	6.4 ± 6.3	
40-49	118(28.2)	7.8 ± 7.1	
50 and above	79 (18.9)	8.2 ± 7.0	
Gender			0.875
Male	153(36.6)	7.2 ± 7.0	
Female	265(63.4)	7.3 ± 6.5	
Medical education			0.772
Lower than associate medical degree	115(27.5)	7.3 ± 7.4	
Associate medical degree	164(39.2)	7.3 ± 6.2	
Undergraduate medical degree or higher	139(33.3)	7.2 ± 6.6	
Profession			0.383
Doctor	151(36.1)	6.9 ± 6.4	
Nurse	119(28.5)	7.8 ± 6.4	
Other (pharmacist, counselor, etc.)	148(35.4)	7.1 ± 7.1	
Years of working in medical field			0.121
<10	175(41.9)	7.2 ± 6.9	
10-20	105(25.1)	6.3 ± 5.7	
>20	138(33.0)	8.1 ± 7.0	
Years of working in MMT clinic			0.534
<2	112(26.8)	6.9 ± 6.9	
2-5	193(46.2)	7.4 ± 6.3	
>5	113(27.0)	7.4 ± 7.1	
Receive national MMT training			**0.020**
Yes	201(48.1)	6.5 ± 6.4	
No	217(51.9)	7.9 ± 6.8	
MMT knowledge			
Mean ± SD	14.0 ± 2.0	-	0.990

[1] A higher score indicated a higher level of stigma towards PWUD.

[2] The Kruskal-Wallis test was used for the categorical variables and the simple linear regression was used for the MMT knowledge score.

Abbreviation: PWUD, people who use drugs; SD, standard deviation; MMT, methadone maintenance treatment

Table 2.

Comparisons of stigmatizing attitudes towards PWUD and non-PWUD with the Wilcoxon signed-rank test (N=418)

Items	Mean score of agreement level [1]		Vignette difference [2]	P
	PWUD	Non-PWUD	Mean (95% CI)	
Responsible for his unemployment	3.8	3.0	0.8 (0.7, 0.9)	**<0.001**
Not deserves sympathy and understanding	2.9	2.3	0.6 (0.5, 0.7)	**<0.001**
Deserves what has happened to him	3.3	2.4	0.9 (0.8, 1.0)	**<0.001**
Dangerous to other people	3.2	2.3	0.9 (0.8, 1.0)	**<0.001**
Difficult to find a job again	3.1	2.1	1.0 (0.9, 1.1)	**<0.001**
Deserves to lose his job	2.8	1.9	0.9 (0.8, 1.0)	**<0.001**
You would not hire him, if you were an employer	3.0	2.3	0.7 (0.6, 0.8)	**<0.001**
You would be unwilling to provide him the services	1.9	1.8	0.1 (0.1, 0.2)	**<0.001**
His girlfriend should break up with him	3.0	2.5	0.5 (0.4, 0.6)	**<0.001**
You would not allow your children to visit his home	3.4	2.6	0.8 (0.7, 0.9)	**<0.001**

[1] A higher score indicated a higher level of stigmatizing attitudes.

[2] A larger difference indicated a higher level of stigma towards PWUD than non-PWUD.

Abbreviation: PWUD, people who use drugs; CI, confidence interval

Table 3.

The linear mixed model on participants' stigma towards PWUD (N=418)

Variables	Stigma towards PWUD [1]		
	Estimate	95% CI	P
Age (years)	0.04	(−0.07, 0.15)	0.502
Female vs. male	−0.36	(−1.81, 1.09)	0.627
Years of school completed	0.04	(−0.24, 0.32)	0.782
Doctor vs. other types of providers	−0.81	(−2.30, 0.68)	0.287
Years of working in medical field	0.02	(−0.07, 0.11)	0.683
Years of working in MMT clinics	0.13	(−0.22, 0.47)	0.468
Received vs. not received national MMT training	−1.79	(−3.13, −0.45)	**0.009**
MMT knowledge score	0.00	(−0.34, 0.35)	0.990

[1]The model was also adjusted for the province and MMT clinic unit which were treated as random-effects factors.

Abbreviation: PWUD, people who use drugs; CI, confidence interval; MMT, methadone maintenance treatment.