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ORIGINAL ARTICLE

Turnover intention among service providers in Chinese methadone maintenance treatment clinics

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Abstract

Aim High turnover rates among service providers have burdened addiction treatment clinics and affected patient care and treatment outcome. In this study, we identified factors associated with providers' turnover intention in Chinese methadone maintenance treatment (MMT) clinics.

Subjects and methods This study used the baseline data from a randomized controlled trial conducted in 68 MMT clinics in five provinces in China. Service providers' turnover intention, perceived risk at work, job satisfaction, years working in the clinic as well as sociodemographic characteristics were collected in the assessment. A logistic mixed-effects model was used to identify factors associated with providers' turnover intention.

Results Approximately one-third of these 418 service providers intended to change their job in this study. The findings of regression analysis showed that perceived risk at work was positively associated with the turnover intention (OR = 1.28; 95% CI: 1.17, 1.41) and job satisfaction was negatively related to the turnover intention (OR = 0.97; 95% CI: 0.95, 0.99).

Conclusion Study findings highlighted the importance of addressing service providers' perceived risk at work and job satisfaction to reduce turnover intention. Intervention strategies that focus on occupation safety and job satisfaction could be integrated into current training programs to maintain a stable workforce in the MMT programs.

Clinical trial registration details This trial was registered at ClinicalTrials.gov.
Registration date: January 4, 2013. Identifier: NCT01760720.
Link: https://clinicaltrials.gov/ct2/show/NCT01760720

Keywords Turnover intention · Service providers · Methadone maintenance treatment · China

Introduction

Service providers in the addiction treatment system play an important role in treatment care and outcome. However, the turnover rates and percent of service providers who resigned their job during the last year were reported as about 20% to 30%, respectively, among service providers in addiction treatment settings (Eby et al. 2010; Garner and Hunter 2014). Service providers' turnover could affect patients' treatment adherence and outcome by disrupting the stable rapport between service providers and patients (Duraisingam et al. 2009; Rothrauff et al. 2011) and have deleterious impacts on patient care (Knudsen et al. 2007; Eby et al. 2010; Garner and Hunter 2014). Previous studies reported that patients in addiction treatment stay longer in the treatment and do better if they receive medical services from the same service providers (Jackson 2002; Knight et al. 2008; McKay 2009; Eby et al. 2010; Li et al. 2017). Meanwhile, provider turnover burdens the addiction treatment clinics with high financial costs for recruitment and the retraining process (Cartwright and Solano 2003).

Turnover intention was defined as one's attitude to quitting the job, which was the proxy predictor of turnover behavior (Price and Mueller 1981; Cho and Lewis 2012). In previous studies, service providers' turnover intention in addiction treatment can be influenced by various factors such as age, gender, wage, job satisfaction and support from leaders and colleagues (Eby et al. 2010; Garner and Hunter 2014).

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Younger and male providers were more likely to quit the job (Garner et al. 2007). Low salary and lack of benefits contributed to turnover intention (Knudsen et al. 2003). It was also reported that providers' job satisfaction was essential to their stayingy in the job (Duraisingam et al. 2009; Han and Jekel 2011). Service providers dealing with injecting drug users in addiction treatment clinics always perceived more risks than providers from medical settings. They were concerned about being exposed to patients living with infectious diseases or to their propensity for violence and desired to find a safer job (Lin et al. 2010; Li et al. 2013a, b; Bride et al. 2015; Tang 2015). Further studies are necessary to address the factors involved in turnover intention among service providers dealing with injecting drug users.

The Chinese government implemented the methadone maintenance treatment (MMT) program in 2004 (Pang et al. 2007). The MMT clinics expanded to > 750 clinics, covering 28 provinces and serving > 180,000 clients by 2015 (UNAIDS 2015). Medical services from the MMT clinics mainly consisted of methadone prescription, physical examination, psychological counseling and health education, which were provided by doctors, pharmacists, nurses, counselors and supervisors, respectively. Some MMT clinics provided work skills training and social support services. Based on these services, the Chinese MMT program has made a great contribution to heroin use reduction and HIV prevention (Yin et al. 2010). However, during the rapidly expanding process, service providers faced various challenges such as low income, threats of violence, heavy work loads, concern about personal safety, low job satisfaction and a high level of emotional burnout (Lin et al. 2010, 2018; Li et al. 2019), which altogether could lead to an unstable workforce. In this study, we aimed to explore factors associated with turnover intention among service providers working in MMT clinics to better improve the performance of MMT programs in China. The factors of interest included service providers' demographic characteristics, work experiences, perceived risk and job satisfaction.

Methods

Study setting and participants

This study used the baseline data from a randomized controlled trial conducted in 68 MMT clinics in five provinces in China (Li et al. 2013a, b, 2019). The survey was conducted from September 2012 to August 2013. In a typical MMT clinic in China, there were about five types of service providers (doctors, nurses, pharmacists, counselors and supervisors) who provided direct medical service to the patients. Supporting staff who did not provide direct medical services, such as security personnel and cleaners, were excluded. The medical service included methadone prescription, medication dispensing, counseling/client education, urine tests, physical examination and pharmaceutical management. All the participants were aged ≥ 18 years and currently provided direct medical services in the selected clinics. Before the assessment, research coordinators introduced the study purposes and procedures to the prospective participants and obtained informed consent. Service providers finished the survey questionnaire with the computer-assisted self-interviewing (CASI) method, which was developed with automatic skip patterns and logic check. The survey was administered in a private room and lasted for 45 to 60 min. A total of 418 service providers were recruited from the 68 clinics, usually with five to seven members in each clinic. The Institutional Review Boards had approved the study at the University of California, Los Angeles, and National Center for AIDS Prevention and Control, Chinese Center for Disease Control and Prevention.

Measures

Turnover intention was measured by the response to the statement "You wish you could change your job so that you would not have to deal with drug users." The original answers ranged from "strongly agree" to "strongly disagree," which were dichotomized into "Yes" (agree, strongly agree) and "No" (strongly disagree, disagree, not sure).

Perceived risk at work was measured with five statements adopted from prior studies (Bennett et al. 1994; Li et al. 2007). The five items included: (1) "Your work puts you at high risk of HIV," (2) "Your work puts you at high risk of being attacked by clients whom you work with," (3) "You do not feel a high personal safety level at your work," (4) "Your work puts you at high risk of tuberculosis," and (5) "Your work puts you at high risk of hepatitis." The original responses ranged from (1) "strongly agree" to (5) "strongly disagree." After reversing all the items, a total score was constructed by summing all the responses, with a higher score indicating a higher level of perceived risk at work (range 5–25, Cronbach's alpha = 0.86).

Job satisfaction was assessed with a 30-item scale which was adapted from a previous scale (Bellingham 2004), for example, "You look forward to going to work on Monday morning" and "You feel positive and up most of the time you are working." Likert scale response categories for each item ranged from 1 = "strongly agree" to 5 = "strongly disagree." A scale was generated by summing all items, with a higher score indicating higher job satisfaction (range 30–150, Cronbach's alpha = 0.94).

Demographic characteristics were collected including gender, age, highest medical training and profession (e.g., doctors, nurses, others). This study also asked participants about their years working in the current MMT clinic and reception of national training related to MMT (yes or no).

Data analysis

The distribution of characteristics was first described and compared between participants with and without turnover intention. Chi-square and t-tests were performed in the univariate analysis. The logistic mixed-effects model was used to control the cluster effect from MMT clinics and explore the factors associated with providers' turnover intention. The fixed effect variables included gender, age, profession, education, years working in current MMT, reception of national MMT training, perceived risk at work and job satisfaction. The *P* value and 95% confidence interval (95% CI) of the odds ratio were presented with α level = 0.05. Statistical analyses were performed using the SAS 9.4 statistical software package (SAS Institute Inc., Cary, NC, USA).

Results

The distribution of characteristics is summarized in Table 1. Most of the participants were female (63.4%), and nearly one-third (31.1%) were aged between 36 to 45 years old. More than one-third (36.1%) of the participants were doctors, and nearly half of the sample reported a college degree and above (50.7%). About 27% of participants had worked in the MMT clinic for > 5 years. The mean of perceived risk at work was 18.5 ± 3.9 (range: 5–25), and the mean of job satisfaction was 110.5 ± 13.9 (range: 30–150).

Table 1 also presents the comparison of characteristics between providers with and without turnover intention. Of the 418 service providers in the study, nearly one-third intended to change their current job (27.3%). Compared with providers with turnover intention, those providers without turnover intention reported a higher percentage of those aged < 35 years old ($P = 0.04$) and a lower percentage of those working > 5 years ($P = 0.03$). Providers with turnover intention also reported a higher level of perceived risk at work ($P < 0.001$) and a lower level of job satisfaction ($P < 0.001$).

The results of the logistic mixed-effects model on turnover intention are presented in Table 2. When other covariates were held constant, the perceived risk at work was positively associated with the turnover intention (OR = 1.28; 95% CI: 1.17,

Table 1 Distribution of service providers' characteristics ($N = 418$)

Characteristics	*N* (%)	Turnover intention		*P* value
		Yes ($N = 114$) *n* (%)	No ($N = 304$) *n* (%)	
Gender				0.77[a]
Male	153 (36.6)	43 (37.7)	110 (36.2)	
Female	265 (63.4)	71 (62.3)	194 (63.8)	
Age (years)				0.04[a]
≤ 35 years	171 (40.9)	37 (32.5)	134 (44.0)	
36–45 years	130 (31.1)	45 (39.5)	85 (28.0)	
> 45 years	117 (28.0)	32 (28.0)	85 (28.0)	
Profession				0.27[a]
Doctor	151 (36.1)	48 (42.1)	103 (33.9)	
Nurse	119 (28.5)	31 (27.2)	88 (28.9)	
Other (pharmacists/counselors/supervisors)	148 (35.4)	35 (30.7)	113 (37.2)	
Education level				0.80[a]
Associate degree or below	206 (49.3)	55 (48.2)	151 (49.7)	
College degree or above	212 (50.7)	59 (51.8)	153 (50.3)	
Working in the current MMT clinic				0.03[a]
< 2 years	112 (26.8)	23 (20.1)	89 (29.3)	
2–5 years	193 (46.2)	50 (43.9)	143 (47.0)	
> 5 years	113 (27.0)	41 (36.0)	72 (23.7)	
Reception of national MMT training				0.40[a]
Yes	201 (48.1)	51 (44.7)	150 (49.3)	
No	217 (51.9)	63 (55.3)	154 (50.7)	
Scales				
Perceived risk at work (mean ± SD)	18.5 ± 3.9	20.6 ± 3.0	17.8 ± 3.9	< 0.001[b]
Job satisfaction (mean ± SD)	110.5 ± 13.9	105.9 ± 14.2	112.2 ± 13.3	< 0.001[b]

[a] Chi-square test; [b] t-test

Table 2 Logistic mixed-effects model for turnover intention ($N = 418$)

Variables	OR (95% CI)
Gender (Ref: female)	
Male	0.98 (0.52, 1.84)
Age (Ref: ≤ 35 years)	
36–45 years	0.70 (0.33, 1.50)
> 45 years	1.23 (0.61, 2.48)
Profession (Ref: doctor)	
Nurse	0.73 (0.34, 1.54)
Others (pharmacists/counselors/supervisors)	0.84 (0.44, 1.59)
Education level (Ref: associate degree or below)	
College degree or above	1.11 (0.60, 2.05)
Working in the current MMT clinic (Ref: < 2 years)	
2–5 years	1.15 (0.57, 2.32)
> five years	1.74 (0.76, 3.97)
Reception of national MMT training (Ref: no)	
Yes	0.83 (0.47, 1.47)
Perceived risk at work	1.27 (1.17, 1.39)
Job satisfaction	0.97 (0.95, 0.99)

1.41) and job satisfaction was negatively associated with turnover intention (OR = 0.97; 95% CI: 0.95, 0.99). Other factors including age, gender, profession, education and years working in current MMT clinics were not significantly associated with the turnover intention.

Discussion

This study reported that nearly one-third of service providers in the MMT clinics intended to change their job, consistent with the findings from other countries (Eby et al. 2010; Garner and Hunter 2014) and similar to the results from the other medical service departments in China (Chen et al. 2016). The possible reasons for the high turnover intention could be that providers working in the Chinese MMT clinics faced challenges associated with low salary, heavy workloads, physical safety and difficulties in career pursuit (Lin et al. 2010). These issues put tremendous pressure on the treatment providers and increased turnover retention (Li et al. 2013a, b). The study results suggested that health administrators and programmers need to pay attention to the turnover intention among service providers in MMT clinics. Intervention programs and in-service training should address providers' needs for the stability of the treatment workforce and improve the service delivery.

This study revealed that perceived higher risk at work was more likely to change the job among MMT service providers. Violent assaults against healthcare service providers have become a common phenomenon in Chinese general hospitals (Chen et al. 2016; Wu et al. 2016). Providers in MMT clinics dealing with this vulnerable population, injecting drug users, also had similar physical safety threats. Previous studies reported that service providers considered those who use drugs to be "violent people" who were not easy to work with (Tang 2015). Although all MMT clinics have hired security personnel, some patients threaten to attack the providers when they get off work. Meanwhile, the prevalence of HIV, HCV, HIV-HCV co-infection and tuberculosis among MMT clients was higher than that among the general patients (Zhang et al. 2013; Zhuang et al. 2012). MMT providers worried about getting infected when they did blood or urine testing for the patients (Lin et al. 2010). With these concerns, MMT providers may avoid contacting patients and try to find other jobs without exposure to such risk. This finding suggested that the administrators in health departments should develop more effective measures to improve service providers' safety during work, including strengthening occupational exposure protection, adding security personnel in the clinics and enhancing cooperation with law reinforcement.

We also found that job satisfaction was negatively associated with turnover intention in this study. This finding was consistent with those of prior studies showing that healthcare workers in hospitals with lower levels of job satisfaction were more likely to intend to quit the job (Lu et al. 2019; Zhang et al. 2017). In Chinese MMT clinics, providers' salaries and benefits were lower than those of staff working in the other departments, which destroyed their enthusiasm, and the heavy workload could easily drive them to job burnout (Lin et al. 2010). The service providers were also concerned they would lose their competency in other medical skills and wanted to find a job with good promotion opportunities (Lin et al. 2010). Future interventions should ensure enough institutional support, such as increasing the salary level and providing more study opportunities, to achieve improvement in job satisfaction.

The findings in this study should be interpreted with consideration of the limitations. First, the survey was a cross-sectional study that restricted the causal inference. Second, the turnover intention was the proxy measure of turnover behavior. Third, the data were based on service providers' self-report; the reporting bias cannot be eliminated. Lastly, the clinics in the study were in five provinces in China. Therefore, it was inappropriate to generalize the findings to other MMT clinics without considering the geographic locations and settings.

The study highlighted several important implications for the policy-makers of China's MMT program to respond to the issue of turnover among service providers. The intervention should address the concerns of service providers with a higher level of perceived risk at work to encourage them to remain in the MMT clinics.

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Authorship contribution All authors contributed to the article and approved the final article. Jun Chen analyzed the data, interpreted the outcomes and wrote the article. Chunqing Lin participated in interpreting the outcomes and writing the article. Wei Cao assisted with summarizing the literature and writing the article. Zunyou Wu assisted with overseeing the implementation of the intervention trial. Li Li was responsible for conceptualizing and designing the whole study and writing this article.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee (the University of California Los Angeles and National Center for AIDS Prevention and Control, Chinese Center for Disease Control and Prevention) and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed consent Informed consent was obtained from all individual participants included in the study.

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