

ORIGINAL ARTICLES

Community health workers' interaction with people who use drugs in Dien Bien in 2019

Pham Huy Trang¹, Dinh Thi Thanh Thuy¹, Li Li², Le Minh Giang¹, Nguyen Bich Diep^{1*}

ABSTRACT

Objectives: To describe the interactions of community health workers (CHW) with people who use drugs (PWUD) and the associated factors at community health centers (CHC) in Dien Bien in 2019.

Methods: A cross-sectional study was conducted, collecting data from 276 CHW in 67 CHC in Dien Bien in 2019. Participants' interactions with PWUD, job satisfaction, perception of risk and stigma when working with PWUD, attitude and empathy towards PWUD were measured using multi-item scales. A multivariate linear regression model was performed to explore factors associated with CHW' interaction with PWUD.

Results: The mean score of CHW' interaction with PWUD was 47.2/60 (SD \pm 7.9). CHW's interaction score was negatively associated with negative attitude ($\beta = -0.169$, 95% CL: -0.247; -0.090), and positively associated with empathy towards PWUD ($\beta = 0.193$; 95% CL= 0.090; 0.296), after adjusting for their background (gender, education level, major responsibility and years in medical field) and job-related characteristics.

Conclusions: The study highlights the importance of CHW' empathy and attitude towards PWUD in engaging with this population during clinical interaction. Tailored interventions aimed at reducing stigma and enhancing empathy could enhance providers' rapport with PWUD, leading to improved treatment engagement and outcomes.

Keywords: MMT decentralization, interaction, community health worker, people who use drugs.

INTRODUCTION

The interactions between healthcare providers and their patients are important and contribute to the success of treatment outcomes (1). Providers' effective communication empowers patients to be more active in treatment decisions throughout care. Studies have shown its effects on patient satisfaction and improves patients' health outcomes (2, 3). Good relationship with providers is even more important for marginalized populations with

chronic diseases such as substance abusers in improving their access to all levels of care. A recent systematic review suggests that provider-client relationships are effective at predicting client retention in treatment and client ultimate outcomes (4). However, previous studies have observed primary care providers' discomfort and avoidance during drug-related discussions with patients, even if they discussed alcohol, the most socially accepted drug (5). Moreover, people who use drugs (PWUD) often lack the ability to effectively communicate with healthcare



Corresponding author: Nguyen Bich Diep
Email: nguyenbichdiep@hmu.edu.vn

¹Hanoi Medical University

²University of California, Los Angeles (UCLA)

Submitted: 29 December, 2024

Revised version received: 13 February, 2025

Published: 28 February, 2025

DOI: <https://doi.org/10.38148/JHDS.0901SKPT24-134>

providers while they are at greater needs of healthcare than the general population (6–8).

PWUD often face discrimination and stigma, which can result in reduced opportunities to access and participate in HIV prevention and treatment services, worsening their HIV-related challenges (9, 10). PWUD are often considered to be at high risk of infectious diseases including HIV and viral hepatitis and stereotyped to be violent. Working with them, service providers may encounter misunderstanding and avoidance from their social connections and families. Earlier research also pinpointed two main origins of stigma among service providers: misunderstandings about the behaviors of HIV-affected populations and concerns about contracting HIV through occupational exposure (11, 12). How providers perceive risks and stigma when working with certain kinds of patients may lead to their reluctance in communicating and providing care to these patients. Provider's perception of their job also relates to their relationships with patients. Providers who are satisfied with their job appear to have better relationships with patients and provide patients with more information throughout treatment (13, 14). Providers' attitude and communication skills are integral parts of effective communication, especially at primary care settings where providers are expected to be more open and less stigmatizing towards drug use behaviors. Besides, providers' background characteristics such as gender, medical training and job position have been shown to be associated with providers' attitudes, empathy and interactions with patients (15, 16).

PWUD account for about 70% of people living with HIV in Vietnam, placing them at the center of the country's twin HIV and addiction epidemics (17). To improve their care continuum, the country has started implementing the MMT dispensing model in commune health centers (CHC) which is

the lowest level of the healthcare system in 2015 (18). As of 2019, the decentralization of MMT to CHC has been implemented in 24 out of 63 provinces of Vietnam, mostly in remote and/or mountainous areas (19). Dien Bien, a remote province in Northwest Vietnam predominantly inhabited by ethnic minorities, faces significant challenges such as poverty, low education levels, and frequent labor migration. The province has been designated as one of Vietnam's key PEPFAR-supported provinces, Dien Bien has made notable strides in HIV control and prevention, reducing PWID prevalence to 26% by 2018 (20). Despite efforts, the province has faced challenges in meeting treatment targets, with current MMT coverage at 60.2% of the intended 4,400 PWUD. Community health workers (CHW) at CHC are expected to constitute a crucial component of the success of these programs. However, to our knowledge, limited study has explored their communication skills and interactions with this population. To fill in this gap, we described the interactions of CHW with PWUD and its associated factors at CHC in Dien Bien, where among the first province to implement both decentralized antiretroviral treatment (ART) and methadone treatment in Vietnam. This study contributes to understanding CHW' interactions with PWUD, offering insights relevant to low-resource settings.

METHODS

Study design: A Cross-sectional study.

Research subjects: We included all CHW from 29 CHCs that provided methadone treatment and 38/101CHCs (randomly selected) without this service. In the CHCs that provided methadone treatment, we recruited those who had been working in the local methadone program, including program managers and clinical providers (physicians, counselors, pharmacists and/or

medication dispensing staff). In the CHCs that provided no methadone treatment, potential participants were physicians/physician assistants, nurses, pharmacists, or medication dispensing staff currently working at the CHC. Potential participants were informed about the study objectives, procedures, risks, and benefits before giving their verbal consent to participate in the study.

Study site and time: 9 districts of Dien Bien Province, Vietnam from November 2019 to December 2019.

Sample size and sampling method: All eligible CHWs in the selected CHCs were invited to participate in the study.

Research variables: Participants' demographic and professional background characteristics were self-reported, including age (years), gender (male vs. female), ethnicity (Kinh, Thai vs. other) education level (graduate medical training vs. lower), major responsibility (clinical practice vs. others), time working in the medical field (years), time working at this CHC (years) and number of monthly patients who use drugs.

The interaction with PWUD was measured by a 12-item scale adapted from provider-client interaction scale used in MMT clinics in China (21). These questions asked about how CHW interacted with PWUD. For example, CHW provided counseling and/or encouraged PWUD when interacting with them. Responses ranged from 1 = "not at all" to 5 = "very much". All items' score were summed, and a higher score indicated a higher level of interaction. The internal consistency of this scale was acceptable (Cronbach's alpha 0.89).

The perceived impact of working with PWUD (perceived stigma) was measured by six questions adapted from the Impact Scale (22, 23). These questions asked CHW about internalized shame reported by service

providers and their perception of being stigmatized due to working with PWUD. The perceived risk was measured by four questions about feelings of safety and risks of getting infectious diseases including HIV, TB, and hepatitis when working with PWUD (22, 23). Response categories ranged from 1 = "strongly agree" to 5 = "strongly disagree". All items were reverse-coded and then summed. A higher score indicated a greater level of perceived stigma and risk when working with PWUD. The internal consistency of the two scales was acceptable with Cronbach's alpha of 0.88 and 0.84, respectively.

Job satisfaction was measured by a 9-question scale including two sub-scales: work motivation and work-life balance (24). Response categories ranged from 1 = "strongly agree" to 5 = "strongly disagree". All items were reverse-coded and then summed. Higher scores indicate higher levels of satisfaction. These scales had an acceptable internal consistency (Cronbach's alpha 0.91 and 0.84, respectively).

Negative attitude towards PWUD was measured by eighteen questions divided into four subscales: role adequacy, role support, job satisfaction and role-related self-esteem, adapted from the Drug Problems Perceptions Questionnaire (25). Responses ranging from 1 = "strongly agree" to 7 = "strongly disagree". Some items were reverse-coded, then all items were summed. A higher score indicated more negative attitude towards PWUD. The internal consistency of these scales was acceptable (Cronbach's alpha ranging from 0.61 to 0.90).

The empathy when working with PWUD were measured by a 20-item scale adapted from the Jefferson scale of empathy (26). The questions measured CHW' perception of empathy and their mobilization of empathy skills in working with PWUD. Response categories ranged from 1 = "strongly agree"

to 5 = "strongly disagree". After reverse-coding some items, all scores were summed, and a higher summary score indicated a higher level of empathy. In the study sample, the internal consistency of this scale was acceptable (Cronbach's alpha 0.86).

Tools and methods of data collection: Study participants completed an assessment on a tablet in a private office at their workplaces. Participants read the on-screen questions and entered their responses directly into a computerized database. Our trained staff were available on site to provide instructions on how to use the online system and clarify the survey questions as needed. All questions were in Vietnamese. Each assessment took between 45 and 60 minutes to complete. Participants received 100,000 VND (approximately 5 USD) after completing the assessment as compensation for their time.

Processing and analyzing data: We conducted descriptive analyses to summarize

CHW' demographic characteristics and their interactions with PWUD, presenting categorical variables as percentages and continuous variables as means with standard deviations. Correlations between interactions and independent variables were assessed using ANOVA and Pearson correlation. Multivariate regression models was used to identify factors associated with CHW' interactions, adjusting for demographic and job-related characteristics. Analyses were performed using Stata 17.0.

Research ethics: The study was approved by Institutional Review Board (IRB) of University of California, Los Angeles, the United States (No. 19-001785) on August 19th 2019 and Hanoi Medical University, Vietnam (No. 03) on August 25th 2019.

RESULT

Table 1. Demographic and background characteristics of CHW (N=276)

Characteristics	Overall	MMT provider	Non-MMT provider	p
		N (%)		
Number of participants	276 (100)	114 (41.3)	162 (58.7)	
Gender				
Male	141 (51.1)	52 (45.6)	89 (54.9)	0.127 ¹
Ethnicity				
Kinh	104 (37.7)	53 (46.5)	51 (31.5)	0.013
Thai	142 (51.5)	54 (47.4)	88 (54.3)	
Other	30 (10.8)	7 (6.1)	23 (14.2)	
Highest medical training				
Graduated or higher	44 (15.9)	23 (20.2)	21 (13.0)	0.107 ²
College or lower	232 (84.1)	91 (79.8)	141 (87.0)	
Major responsibility				
Clinical practice	164 (59.4)	60 (52.6)	104 (64.2)	0.054 ²
Others	112 (40.6)	54 (47.4)	58 (35.8)	

Characteristics	Overall	MMT provider	Non-MMT provider	p
	N (%)			
	Mean (SD)			
Age	39.4 (7.9)	38.3 (7.5)	40.2 (8.2)	0.051 ²
Years in medical field	10.4 (7.7)	9.5 (7.7)	10.9 (7.6)	0.138 ²
Years at current CHC	6.4 (6.3)	5.3 (5.1)	7.2 (6.9)	0.014 ²
Monthly patients who use drugs	19.7 (25.7)	38.4 (29.8)	6.5 (8.9)	< 0.001 ²

1: chi-square test; 2: t-test;

CHC: community health center; PWUD: people who use drugs; CL: confidence limits

Among 276 CHW participated in the study, 141 (51.1%) were male and 164 (59.4%) had clinical practice as major responsibility. The average age was 39.4 (SD 7.9), the average time in the medical field was 10.4 years (SD 7.7) and the average time at current CHC was 6.4 years (SD 6.3). The two most

popular ethnicity groups were Thai (51.5%) and Kinh (37.7%). In terms of education, 44 (15.9%) CHW had graduated from university or higher in medical degree. MMT providers saw more PWUD on average (38.4, SD 29.8) compared to non-MMT providers (6.5, SD 8.9) on a monthly basis.

Table 2. CHW’ interactions level and related scales (N=276)

	Overall	MMT provider	Non-MMT provider	p
Provider-client interaction	47.2 (7.9)	47.8 (6.7)	46.8 (8.7)	0.316
Perceived stigma	11.9 (4.5)	11.0 (4.6)	12.6 (4.3)	0.005
Perceived risk	11.5 (3.8)	11.2 (3.6)	11.7 (3.9)	0.340
Job satisfaction	36.3 (5.1)	35.4 (5.4)	36.9 (4.9)	0.021
Negative attitude	58.3 (12.5)	54.7 (11.1)	60.8 (12.9)	< 0.001
Empathy	76.4 (9.6)	75.4 (8.3)	77.2 (10.4)	0.122

The average score of interaction levels was 47.2 (SD 7.9). CHW with experiences working in MMT, compared to those without these experiences, had significantly lower perceived

stigma (mean scores 11.0 vs. 12.6, p = 0.005), lower job satisfaction (mean scores 35.4 vs. 36.9, p = 0.021), and lower negative attitude (mean scores 54.7 vs. 60.8, p < 0.001).

Table 3. Multivariate regression model on interaction with PWUD of CHW (N=276)

Variables	Estimate	95% CL	p
Male vs. Female	0.843	-0.923; 2.609	0.348
Graduate training vs. Lower	0.952	-1.453; 3.358	0.436
Clinical practice vs. Others	0.394	-1.428; 2.216	0.671
Years in the medical field	0.096	-0.017; 0.209	0.097
Monthly patient who use drugs	0.035	-0.009; 0.078	0.119
Worked in CHC providing CHC	0.522	-1.748; 2.791	0.651
Perceived stigma	-0.009	-0.227; 0.209	0.935
Perceived risk	-0.112	-0.344; 0.120	0.343
Job satisfaction	0.112	-0.066; 0.289	0.216
Negative attitude toward PWUD	-0.169	-0.247; -0.090	<0.001
Empathy toward PWUD	0.193	0.090; 0.296	<0.001

CHC: community health center, PWUD: people who use drugs; CL: confidence limits

Results of the multilevel regression model was shown in Table 3, CHW with a higher level of empathy ($\beta = 0.193$; 95% CL= 0.090; 0.296) appeared to be associated with a higher level of interaction with PWUD among CHW. Moreover, a higher level of negative attitude toward PWUD ($\beta = -0.169$, 95% CL: -0.247; -0.090) were less likely to interact with PWUD.

DISCUSSION

Our study described the interactions of CHW with PWUD and its associated factors at CHCs in Dien Bien. As providers and working environments in primary care are different to those in higher level or in specialized healthcare settings, our study results should be taken into consideration in future studies and in interventions to improve healthcare outcomes of PWUD.

The results regarding interaction and related factors are consistent with findings from previous studies conducted in Vinh Phuc and Phu Tho Province of Vietnam (18). Notably, the mean interaction score among healthcare

professionals is approximately 4 points per sentence, indicating their consistent engagement in discussions, guidance, and encouragement with PWUD. This score exhibits no variance across gender, educational attainment, or professional background. Our findings have similar results with a previous similar study conducted from 68 Methadone Maintenance Clinics in another developing Asian country, China which reported the moderate level of CHW' interaction toward PWUD (16).

The attitude-related characteristics appeared to be one of the most important factors associated with CHW' interaction with PWUD. Our findings indicate that CHW with experience in MMT programs exhibit lower levels of negative attitudes compared to those without such experience. This suggests that exposure to structured MMT environments helps reduce CHW perceptions of risk and challenges, highlighting the value of repeated and meaningful engagement. Empathy emerged as a significant positive factor in enhancing CHW-PWUD interactions (27, 28). Among CHW with the same background, and even the same level of perceived risk, stigma

and job satisfaction, those who had a higher empathy towards PWUD consistently had better interactions with PWUD. With empathy, providers can better understand patients' illness, treatment expectations and challenges. This results in better patient-provider communication lowering patient's emotional distress and increasing their satisfaction with treatment (27, 28). This finding underscores the importance of targeted training programs that build CHW' capacity to empathize and support PWUD effectively. By fostering empathy and reducing stigma, CHW can better contribute to the success of healthcare services, particularly in the context of expanding MMT decentralization program in Vietnam.

The study results should be viewed in light of its limitations. First, the generalizability of the results may be affected by the recruitment frame of several CHW from Dien Bien. Another limitation is the focus on rural and remote areas, which may not fully represent urban or more developed regions. In addition, we could not be able to control for some clinic characteristics which may affect the provider-client interactions. Despite these limitations, the study has explored some associated factors of CHW' interactions with PWUD in primary care settings in a lower-middle income country. Further studies should explain more these relationships to inform future health interventions among primary care.

CONCLUSIONS

The study highlights the importance of CHW' empathy and attitude towards PWUD in engaging with this population during clinical interaction. Tailored interventions aimed at reducing stigma and enhancing empathy could enhance providers' rapport with PWUD should be included in future intervention programs to improve CHW' relationship with PWUD for better treatment outcomes.

REFERENCES

1. Stewart MA. Effective physician-patient communication and health outcomes: a review. *CMAJ Can Med Assoc J.* 1995 May 1;152(9):1423–33.
2. Oetzel J, Wilcox B, Avila M, Hill R, Archiopoli A, Ginossar T. Patient-provider interaction, patient satisfaction, and health outcomes: testing explanatory models for people living with HIV/AIDS. *AIDS Care.* 2015 Aug 3;27(8):972–8.
3. Isangula K, Mwashia L, Pallangyo E, Ndirangu-Mugo E. The role of nurse-client relationships in maternal and child healthcare: a qualitative study in rural Tanzania. *Front Health Serv.* 2023 Jun 26;3:1058840.
4. Marsh JC, Angell B, Andrews CM, Curry A. Client-Provider Relationship and Treatment Outcome: A Systematic Review of Substance Abuse, Child Welfare, and Mental Health Services Research. *J Soc Soc Work Res.* 2012 Jan;3(4):233–67.
5. McCormick KA, Cochran NE, Back AL, Merrill JO, Williams EC, Bradley KA. How Primary Care Providers Talk to Patients About Alcohol. *J Gen Intern Med.* 2006 Sep;21(9):966–72.
6. Heath AJ, Kerr T, Ti L, Kaplan K, Suwannawong P, Wood E, et al. Healthcare avoidance by people who inject drugs in Bangkok, Thailand. *J Public Health.* 2016 Sep 17;38(3):e301–8.
7. McCoy CB, Metsch LR, Chitwood DD, Miles C. Drug Use and Barriers to Use of Health Care Services. *Subst Use Misuse.* 2001 Jan 1;36(6–7):789–804.
8. French MT, McGeary KA, Chitwood DD, McCoy CB. Chronic illicit drug use, health services utilization and the cost of medical care. *Soc Sci Med.* 2000 Jun;50(12):1703–13.
9. Crapanzano KA, Hammarlund R, Ahmad B, Hunsinger N, Kullar R. The association between perceived stigma and substance use disorder treatment outcomes: a review. *Subst Abuse Rehabil.* 2018 Dec 27;10:1–12.
10. Latkin C, Gicquelais R, Clyde C, Dayton L, Davey-Rothwell M, German D, et al. Stigma and drug use settings as correlates of self-reported, nonfatal overdose among people who use drugs in Baltimore, Maryland. *Int J Drug Policy.* 2019 Jun;68:86–92.
11. Chambers LA, Rueda S, Baker DN, Wilson MG, Deutsch R, Raefifar E, et al. Stigma, HIV and health: a qualitative synthesis. *BMC Public Health.* 2015 Sep 3;15:848.
12. Lohiniva AL, Kamal W, Benkirane M, Numair

- T, Abdelrahman M, Saleh H, et al. HIV Stigma Toward People Living With HIV and Health Providers Associated With Their Care: Qualitative Interviews With Community Members in Egypt. *J Assoc Nurses AIDS Care*. 2016 Mar;27(2):188.
13. Williams ES, Skinner AC. Outcomes of Physician Job Satisfaction: A Narrative Review, Implications, and Directions for Future Research. *Health Care Manage Rev*. 2003 Jun;28(2):119.
 14. Pérez-Cárceles MD, Pereñíguez-Barranco JE, Osuna-Carrillo de Albornoz E, Luna-Maldonado A. Derecho de información de los pacientes: influencia de las características socioprofesionales en atención primaria. *Aten Primaria*. 2006 Feb;37(2):69–74.
 15. Li L, Wu Z, Cao X, Zhang L. Provider–Client Interaction in Methadone Treatment Clinics in China. *J Drug Issues*. 2012 Apr 1;42(2):147–55.
 16. Li L, Comulada WS, Lin C, Lan CW, Cao X, Wu Z. Report on Provider–Client Interaction From 68 Methadone Maintenance Clinics in China. *Health Commun*. 2017 Nov;32(11):1368–75.
 17. Lee SJ, Li L, Lin C, Tuan LA. Challenges facing HIV-positive persons who use drugs and their families in Vietnam. *AIDS Care*. 2015 Mar;27(3):283–7.
 18. Nguyen DB. Methadone Maintenance Treatment Decentralization in Vietnam [Internet]. UCLA; 2020 [cited 2024 Dec 25]. Available from: <https://escholarship.org/uc/item/2pr785zq>
 19. Ministry of Health. Results of HIV/AIDS prevention program in 2019 and key tasks in 2020. 2019.
 20. PEPFAR. Vietnam Country Operational Plan (COP) [Internet]. 2018 [cited 2025 Feb 10]. Available from: <https://www.aidsdatahub.org/resource/vietnam-2018-country-operational-plan-strategic-direction-summary>
 21. Li L, Wu Z, Liang LJ, Lin C, Zhang L, Guo S, et al. An Intervention Targeting Service Providers and Clients for Methadone Maintenance Treatment in China: A Cluster-randomized Trial. *Addict Abingdon Engl*. 2013 Feb;108(2):356–66.
 22. Bennett L, Kelaher M, Ross MW. The impact of working with HIV/AIDS on health care professionals: Development of the AIDS Impact Scale. *Psychol Health*. 1994;9(3):221–32.
 23. Li L, Lin C, Wu Z, Wu S, Rotheram-Borus MJ, Detels R, et al. Stigmatization and shame: Consequences of caring for HIV/AIDS patients in China. *AIDS Care*. 2007 Feb;19(2):258–63.
 24. Bellingham, R. Job Satisfaction Survey. 2004.
 25. Watson H, Maclaren W, Kerr S. Staff attitudes towards working with drug users: development of the Drug Problems Perceptions Questionnaire. *Addiction*. 2007;102(2):206–15.
 26. Hojat M, Gonnella JS, Nasca TJ, Mangione S, Veloksi JJ, Magee M. The Jefferson Scale of Physician Empathy: Further Psychometric Data and Differences by Gender and Specialty at Item Level. *Acad Med*. 2002 Oct;77(10):S58.
 27. Neumann M, Wirtz M, Bollschweiler E, Mercer SW, Warm M, Wolf J, et al. Determinants and patient-reported long-term outcomes of physician empathy in oncology: A structural equation modelling approach. *Patient Educ Couns*. 2007 Dec 1;69(1):63–75.
 28. Derksen F, Bensing J, Lagro-Janssen A. Effectiveness of empathy in general practice: a systematic review. *Br J Gen Pract*. 2013 Jan 1;63(606):e76–84.