

Suboptimal non-medical qualities of primary care linked with care avoidance among people who use drugs in a Canadian setting amidst an integrated healthcare reform

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Abstract

Background: People who use unregulated drugs (PWUD) often face significant barriers to – and thereby avoid seeking – healthcare. In Vancouver, Canada, a neighborhood-wide healthcare system reform began implementation in 2016 to improve healthcare delivery and quality. In the wake of this reform, we sought to determine the prevalence of healthcare avoidance and its association with emergency department use among PWUD in this setting and examine patient-reported non-medical qualities of healthcare (“responsiveness”).

Methods: Data were derived from two prospective cohort studies of community-recruited PWUD in Vancouver in 2017-18. Responsiveness was ascertained by the World Health Organizations’ standardized measurements and we evaluated seven domains of responsiveness (dignity, autonomy, communication, confidentiality, prompt attention, choice of provider, and quality of basic amenities). Pearson chi-squared test was used to examine differences in responsiveness between those who did and did not avoid care. Multivariable logistic regression was used to determine the relationship between care avoidance due to past mistreatment and emergency department use, adjusting for potential confounders.

Results: Among 889 participants, 520 (58.5%) were male, 204 (22.9%) reported avoiding healthcare, most commonly for chronic pain (47.4%). Overall, 6.6% to 36.2% reported suboptimal levels (i.e., not always meeting the expected quality) across all seven measured domain of responsiveness. Proportions reporting suboptimal qualities were significantly higher among those who avoided care than those who did not across all domains, including: care as soon as wanted (51.0% vs. 31.8%), listened to carefully (44.1% vs. 20.4%), and involved in healthcare decision making (27.9% vs. 12.7%) (all $p < 0.05$). In multivariable analyses, avoidance of healthcare was independently associated with self-reported emergency department use (adjusted odds ratio=1.49; 95% confidence interval:1.01–2.19).

Conclusion: We found that almost a quarter of our sample of PWUD avoided seeking healthcare due to past mistreatment, and all seven measured domains of responsiveness were suboptimal and linked with avoidance. Individuals who reported avoidance of healthcare were significantly more likely to report emergency department use. Multi-level interventions are needed to remedy the suboptimal qualities of healthcare and thereby reduce care avoidance.

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1.1 INTRODUCTION

People who use unregulated drugs (PWUD) contend with severe health inequities and premature death (Degenhardt et al., 2013; Walker et al., 2017), as they are disproportionately impacted by epidemics of blood-borne illnesses (e.g., HIV and Hepatitis C), adverse mental health, skin and soft tissue infections, among other preventable health outcomes (Biancarelli et al., 2019; Degenhardt et al., 2013; Kendall et al., 2020; Lake & Kennedy, 2016; Walker et al., 2017). These health inequities are compounded by the escalating drug poisoning crisis in Canada and the United States, where many PWUD are exposed to fentanyl-contaminated unregulated drug supplies and thereby suffer from increased risk of overdose (Ahmad et al., 2021; Special Advisory Committee on the Epidemic of Opioid Overdoses, 2021). Despite clinical indication for a variety of preventative and primary care services, PWUD consistently report high rates of unmet healthcare needs (Dion et al., 2020; Moallem et al., 2020; Office of the Surgeon General (US), 2016; Troberg et al., 2019). Healthcare utilization among PWUD is complicated by multiple overlapping factors, including: pervasive stigma and discrimination in healthcare settings (Drumm et al., 2005; Habib & Adorjany, 2003; Hall et al., 2021; Moallem et al., 2020; van Boekel et al., 2013); onerous restrictions on service access (e.g., daily pharmacy attendance to receive medication) (McNeil et al., 2015); co-occurring conditions (e.g., mental health disorders) (Office of the Surgeon General (US), 2016); financial costs (e.g., transportation, medication costs) (Hall et al., 2021); and social and structural conditions (e.g., criminalization, poverty, and housing instability) (Kendall et al., 2020; McNeil et al., 2015; Office of the Surgeon General (US), 2016). It is thus unsurprising that previous research has documented that many PWUD avoid healthcare settings (Biancarelli et al., 2019; Boucher et al., 2017; Drumm et al., 2005; Heath et al., 2016; Meyerson et al., 2021), rely on self-care strategies (Boucher et al., 2017; Drumm et al., 2005), and may delay seeking treatment for health issues until acute care is necessary (McCoy et al., 2001).

Recognizing the important health needs of PWUD and the benefits to be gained from regular engagement with healthcare services, PWUD's utilization of healthcare is an ongoing public health priority. By extension, measuring the responsiveness of healthcare systems to the needs of clients who use drugs is salient to addressing the social exclusion this population experiences. Responsiveness refers to whether the non-clinical aspects of care of a health system meet the legitimate expectations of the population and is measured through patients' service experiences when interacting with these systems (De Silva, 2000; Valentine et al., 2003).

Enhancing the responsiveness of the health system is one of the intrinsic goals of all health systems identified by the World Health Organization (WHO) (Valentine et al., 2003). The WHO has identified eight domains of responsiveness, including respect for persons (dignity, autonomy, communication, and confidentiality) and structural domains (prompt attention, choice of provider, quality of basic amenities, and access to social support networks) (Darby et al., 2003; Valentine et al., 2003, 2008). In this regard, responsiveness can be viewed as a measurement of whether health systems support individuals' right to health (De Silva, 2000; Valentine et al., 2003). We are unaware of any prior studies that have evaluated the responsiveness of health systems among PWUD.

In 2016, the Vancouver Coastal Health Authority (VCH) began a multi-year neighbourhood-wide healthcare system reform in the Downtown Eastside (DTES) neighborhood of Vancouver (Vancouver Coastal Health, 2018). The DTES is one of the epicentres of the ongoing drug poisoning crisis in Canada and many of the residents contend with high levels of marginalization and criminalization (Linden et al., 2013). The reform, called the DTES Second Generation strategy (DTES-2GS), involved launching three interdisciplinary primary care clinics by early 2018, which sought to integrate primary care, mental health, substance use, harm reduction and specialized services (e.g., wound care clinicians, palliative care nurses, and occupational therapists) (Vancouver Coastal Health, 2018). The DTES-2GS also implemented several features to reduce barriers to care for PWUD, including peer support for the delivery of care, extended hours of operation (24/7 care) and outreach visits, as well as staff trainings in trauma-informed practice, cultural competency, and harm reduction (Vancouver Coastal Health, 2018). Additionally, VCH's clinics are provincially-funded and operate within Canada's universal healthcare model which meets the WHO intrinsic health system goal of fairness in financial contributions (Darby et al., 2003). In other words, these clinics are publicly-funded and citizens are not at risk of impoverishment or pay an excessive share of their income to receive care (OECD, 2016). The other WHO intrinsic health system goals, such as the responsiveness of this new health system and whether these services have improved health outcomes among PWUD have yet to be studied. This study sought to determine the prevalence of healthcare avoidance and its association with emergency department use among a community-recruited sample of PWUD. As a secondary analysis, this study examined levels of responsiveness reported by PWUD between those who did and did not avoid healthcare, as well as between different types of primary care clinics PWUD

most frequently accessed, including the three interdisciplinary primary care clinics as part of the DTES-2GS.

2.1 METHODS

2.1.1 Study design and recruitment of participants

The present study utilized data from the DTES-2GS evaluation study (hereafter referred to as the ‘2GS Supplement’). This prospective cohort study was developed with primary aims of observing changes in healthcare access and quality that correspond to the implementation of the DTES-2GS. Data were collected by developing and administering a supplemental questionnaire to a sub-set of participants in two ongoing, well-characterized prospective cohort studies of community-recruited PWUD in Vancouver: the Vancouver Injection Drug Users Study (VIDUS) and the AIDS Care Cohort to evaluate Exposure to Survival Services (ACCESS). Detailed descriptions of these cohorts have been previously published elsewhere (Wood et al., 2009). In brief, VIDUS enrolls HIV-seronegative adults (≥ 18 years of age) who injected unregulated drugs in the month prior to enrolment. ACCESS enrolls HIV-seropositive adults who used an unregulated drug other than or in addition to cannabis in the month prior to enrolment. The studies use harmonized data collection and follow-up procedures to allow for merged data analyses. Trained interviewers administer questionnaires and HIV and HCV serologic testing every six months.

Between December 2017 and November 2018, participants returning for VIDUS and ACCESS follow-up interviews were invited to participate in the 2GS Supplement. A convenience sampling approach was used to recruit 1000 participants. Detailed descriptions of the DTES-2GS Supplement evaluation cohort have also been previously published (Moallem et al., 2020). Trained interviewers administered the 2GS Supplement questionnaire and participants received a \$40 CAD honoraria for completion of the parent cohort follow-up and \$15 CAD for completion of the 2GS Supplement. All three studies have received approval from the University of British Columbia/Providence Health Care Research Ethics Board. The current study used data from the 2GS Supplement and the matching parent cohort questionnaires that were administered between December 2017 and November 2018. For participants who completed the 2GS Supplement questionnaires twice during the study period ($n = 349$), the most recent observation was included in the current study. All participants who completed the questionnaires and reported having a

health issue were included in this analysis. As a sensitivity analysis, we tested for differences in demographic characteristics between participants who did and did not report a healthcare need using Pearson's χ^2 test (for categorical variables) or the Mann-Whitney test (for continuous variables) as appropriate.

2.1.2 The relationship between avoiding care and emergency department use

The primary outcome of interest was a binary measure (yes *vs.* no) of self-reported emergency department use in the past six months.

The primary explanatory variable of interest was 'avoided care' and derived by asking participants: "In the last 6 months, did you delay or not seek the healthcare you needed because you had been treated poorly in the past?". A range of socio-demographic variables were included as secondary explanatory variables, including: age (continuous); ethnicity/ancestry (white *vs.* Black, Indigenous or other persons of color [BIPOC]); self-identified gender (men *vs.* women, transgender or other); and homelessness. A range of comorbidities were also included: anxiety or depression symptoms (moderate/severe *vs.* none to slight/mild) assessed by the Patient-Reported Outcome Measurement Information System (PROMIS) anxiety and depression short form (Broderick et al., 2013); chronic pain, defined as reporting pain that has persisted for greater than three months, which is consistent with the definition of the International Association for the Study of Pain (Merskey, 1986); self-reported infectious disease (e.g., HCV, HIV, STIs) that required medical attention; and self-reported chronic disease (e.g., diabetes, heart disease, cancer, arthritis) that required medical attention. Drug use related variables included: experienced a non-fatal overdose, daily use of heroin (\geq daily *vs.* <daily) and daily use of stimulants (\geq daily *vs.* <daily), defined as powder/crack cocaine or crystal methamphetamine. All variables except for age and ethnicity/ancestry referred to the past six months. All variables were coded as yes *vs.* no unless otherwise stated. Bivariable logistic regression was used to estimate the crude relationship between the explanatory variables of interest and the outcome measure. We then fit a multivariable model between care avoidance and emergency department use, adjusted for all secondary explanatory variables. In the sub-analyses, among those who reported avoidance of healthcare, we examined which health issues participants reported avoiding seeking care for. As a sensitivity analysis, we tested for differences in demographic characteristics among participants who did and did not report

a healthcare need using Pearson's χ^2 test (for categorical variables) or the Mann-Whitney test (for continuous variables) as appropriate.

2.1.3 The domains of responsiveness

For the domains of responsiveness analyses, we utilized items from the WHO Survey on Health and Health System Responsiveness (Valentine et al., 2003), which was adapted through consultation and partnerships with three local PWUD organizations (Olding et al., 2018). We evaluated seven domains of responsiveness at the healthcare facility participants most frequently accessed. The questions are shown in Table 1. For the domains of respect for confidentiality, respect for dignity, respect for autonomy, communication and prompt attention (receiving care as soon as wanted) respondents reported on frequency (always, usually, sometimes, occasionally, never). The full breakdown of the reported frequencies for these domains and the domain of quality of basic amenities is shown in the online supplement. The online supplement shows that the responses were concentrated in the 'always' category, with small numbers reported in the 'usually', 'sometimes', 'occasionally' and 'never' categories. To examine differences between those who did and did not always receive the domain of responsiveness, responses to the domains were dichotomized to: not always (usually, sometimes, occasionally, never) vs. always. As a sensitivity analysis, we also examined the responses categorized as always/usually vs. sometimes/occasionally/never. To evaluate the domain of respect for autonomy, we restricted the sample to those who had a treatment- or test-related decision made in the past six months to evaluate the participant's involvement in healthcare decision making and whether permission was asked before tests/treatments started. For the domain of quality of basic amenities, participants were asked to rate the cleanliness and conditions in the waiting room on a 4-point Likert scale ranging from very poor to very good, which we dichotomized as: very poor/poor vs. good/very good. Participants were also asked to provide a numerical average for how long they usually waited to see a provider, which we dichotomized to: >30 minutes vs. ≤30 minutes. We examined the seven domains of responsiveness stratified by those who did and did not avoid care and tested for differences between the groups using the two-sided Pearson χ^2 test.

In addition, we examined the seven domains of responsiveness among three types of primary care facilities that participants visited most often in the past six months, including: an integrated care clinic, defined as utilizing one of the three VCH's integrated care clinics in the

DTES; a community health centre; and other facilities (i.e., an addiction treatment clinic, a private clinic or doctor, a hospital outpatient unit, or a low threshold service including a mobile clinic/outreach healthcare or low barrier/supportive housing). The two-sided Pearson χ^2 test was used to identify differences between healthcare types. All p-values were two-sided and all statistical analyses were conducted using R, version 3.6.0 (RStudio Team, 2017).

3.1 RESULTS

Between December 2017 and November 2018, 1000 participants were enrolled in the 2GS supplement. Of those, 889 (88.9%) participants reported having a healthcare need and were included in our analytic sample, while 68 (6.8%) participants reported no healthcare need and we had 43 (4.3%) missing responses to the healthcare need question. The median age of the sample was 47 (Interquartile Range [IQR]: 42-57) years and 606 (68.1%) resided in the DTES. The sample comprised 520 (58.5%) men, 363 (40.8%) white individuals, and 519 (58.4%) BIPOC, including: 378 (42.5%) Indigenous and 141 (15.9%) other Persons of Colour. The sample had a high prevalence of morbidities, as shown in Table 2, including 392 (44.1%) reporting chronic pain, 484 (54.4%) reporting infectious disease and 261 (29.4%) reporting chronic disease that required medical attention. In addition, 204 (22.9%) reported avoiding healthcare due to past mistreatment, while 238 (26.8%) accessed an emergency department to receive care in the past six months (Table 2). There were no significant differences in the demographic characteristics between those who did and did not report a healthcare need (data not shown).

We observed higher sub-optimal levels of responsiveness across all seven measured domains among those who had avoided care compared to those who did not (Figure 2). Particularly higher levels were observed in the following items: not always receiving care as soon as wanted (avoided care: 51.0% vs. did not avoid care: 31.8%), not always listened to carefully (44.1% vs. 20.4%), not always being asked for permission before tests/treatment (27.9% vs. 12.7%), not always receiving respect from healthcare providers (30.4% vs. 11.4%), and administrative/office staff (31.4% vs. 15.3%) (all $p < 0.05$).

The unadjusted and adjusted logistic regression results of the relationship between avoiding healthcare and emergency department use are shown in Table 3. In the multivariable analysis, avoiding care was independently and positively associated with emergency department use

(Adjusted Odds Ratio [AOR]=1.49; 95% Confidence Interval [CI]:1.01–2.19), after adjusting for potential confounders. In the sub-analysis (Figure 1), participants most commonly reported avoiding seeking care for chronic pain (93, 47.4%), followed by infection (51, 26.0%), mental health (35, 17.9%) and infectious diseases (32, 16.3%).

Between the three types of primary care facilities (Table 4), we observed the highest levels of sub-optimal care among the integrated care clinics in the following domains: not always receiving care as soon as wanted (integrated care clinics: 45.8 %; community health centres: 43.5%; and other facilities: 29.6%; p-value: <0.001), >30 minutes wait times (trend follows: 25.6%; 39.9%; and 28.4%; p-value: 0.002), not always receiving respect from administrative/office staff (25.6%; 21.7%; and 15.4%; p-value: 0.039), poor/very poor environment (11.3%; 7.0%; 4.3%; p-value: 0.048), and poor/very poor conditions in the waitroom (13.3%; 11.7%; 6.5%; p-value: 0.018) .

Our sensitivity analysis of the response categories for the domains of respect for confidentiality, respect for dignity, respect for autonomy, communication and prompt attention (receiving care as soon as wanted), showed that categorizing responses as always/usually vs. sometimes/occasionally/never had essentially the same results and p-values as the not always vs. always categorization (results not shown) between those who did and did not avoid care.

4.1 DISCUSSION

We found that almost one quarter of participants in our sample of community-recruited PWUD reported avoiding healthcare due to past mistreatment and one quarter reported using the emergency department for care. In the multivariable analysis, after adjustment for potential confounders, participants who avoided care were significantly more likely to report emergency department use. Participants most commonly reported avoiding seeking care for their chronic pain and infections (e.g., pneumonia). Our evaluation of the seven domains of responsiveness revealed higher levels of sub-optimal qualities across all measured domains among those who had reported avoiding care compared to those who did not. Notably, poor qualities of care were most salient in the domains of prompt attention, communication, respect for dignity and autonomy. Among the three primary care types, participants at integrated care clinics reported the lowest standard of care across the domains of prompt attention, respect for dignity, and quality of basic amenities.

Our finding that about one quarter of our sample had avoided healthcare is consistent with findings documented in the US and Thailand (Biancarelli et al., 2019; Boucher et al., 2017; Drumm et al., 2005; Heath et al., 2016; Meyerson et al., 2021). We previously reported a high prevalence of unmet healthcare needs in this population (Moallem et al., 2020), and our findings signal a missed public health opportunity to engage marginalized and vulnerable citizens into preventative and primary care. Primary care utilization is especially important for this population given that we found that those who reported an avoidance of healthcare were significantly more likely to access the emergency department, which is consistent with previous reports among PWUD (McCoy et al., 2001). Although we are unable to determine the health issues among participants presenting at the emergency department, participants most commonly reported avoiding healthcare for chronic pain, infections (e.g., pneumonia), mental health and infectious diseases (e.g., HIV or HCV).

The finding that chronic pain was the most commonly reported health issue participants avoided seeking care for may reflect the inadequacy of pain management previously documented among PWUD (Fibbi et al., 2012; Voon et al., 2015). The most recent clinical guidance on opioid analgesic prescribing for chronic non-cancer pain management strongly recommends against prescribing to clients with an active substance use disorder (Busse et al., 2017). Additional guidance from the Centre for Effective Practice suggests non-pharmacological and non-opioid pharmacotherapy for the treatment of chronic non-cancer pain as first line treatments (Centre for Effective Practice, 2021), including psychological and self-management interventions. This may be both challenging to manage in busy healthcare settings and for PWUD to adhere to given existing barriers to healthcare engagement. Undertreated pain and denial of pain medication can lead to self-managing of pain through unregulated drug use (Fibbi et al., 2012; Voon et al., 2015), which increases exposure to unregulated and contaminated drug supplies, and thus renders PWUD vulnerable to preventable morbidity and mortality (Office of the Surgeon General (US), 2016; Walker et al., 2017). Our findings may reflect the ways in which untreated health issues and interactions with health systems produces health risks and underscores the need for improved clinical guidance for chronic pain management among PWUD and support previous calls for pain management reform among PWUD (Biancarelli et al., 2019; Fibbi et al., 2012; Office of the Surgeon General (US), 2016; Voon et al., 2015).

We also found suboptimal levels of responsiveness across all domains, which was linked to avoidance of healthcare. There were marked differences between the experiences reported by

those who avoided care and those who did not (all $p < 0.05$), particularly in domains related to prompt attention, communication, respect for autonomy and dignity. These findings may provide health service practitioners and policymakers a set of tangible factors to address to improve the quality of healthcare delivery and to reduce negative experiences that may contribute to the avoidance of healthcare; meeting the patients' expectations of care, or in other words, higher levels of optimal responsiveness, has been associated with treatment compliance, prompt seeking of care and retention of medical information among non-drug using populations (De Silva, 2000).

Regarding the relative importance of the domains of responsiveness, the WHO had identified prompt attention, dignity, and communication as the most important reported domains of responsiveness, while access to social support networks was identified as the least important domain in population-based samples from 41 countries (including Canada) (Valentine et al., 2008). Although respect for autonomy was not identified as a priority area in the general population measurements, we found that it was an area with high level of difference between those who did and did not avoid care.

Participants at the three integrated care clinics that were established as part of the 2GS strategy in the DTES reported the highest levels of sub-optimal responsiveness among the domains of prompt attention (receiving care as soon as wanted and >30 minutes wait times), respect for dignity (respect from administrative/office staff), and quality of basic amenities (clean environment and conditions in the waitroom). While integrated/all-in-one models of care in this setting have been associated with less unmet healthcare needs in general, PWUD attending these clinics most commonly reported fear of discrimination and stigma as the reason for their unmet healthcare needs (Moallef et al., 2020). A study in Sydney, Australia, also found that perceived discrimination was a significant predictor of incomplete engagement in addiction treatment among PWUD (Brener et al., 2010).

In addition, participants at the three integrated care clinics reported the highest levels of sub-optimal responsiveness in the domain of prompt attention. This finding is of particular concern in the context of the escalating overdose crisis. Previous research has demonstrated the negative impact of wait times on treatment for substance use and addiction (Friedmann et al., 2003; Pascoe et al., 2013), with treatment-on-demand as the best operational model (Friedmann et al., 2003; Kaplan & Johri, 2000). Our findings support this recommendation, although further research is needed to optimize this model in our setting, and to investigate reasons for reported wait times

among the integrated care clinics in the DTES. The findings also show that participants reported the lowest standard of care at the integrated care clinics across the domain of quality of basic amenities. Given the wide-range of services offered at the integrated care clinics (Vancouver Coastal Health, 2018), there may be a carrying capacity issue related to the demand for these services in the DTES, which may affect the quality of basic amenities and conditions in the waitroom, as well as wait times, but further investigation is needed to confirm this hypothesis. It should be noted that our findings on integrated care clinics may reflect a selection effect for individuals with more complex health needs, which may impact subjective experiences of care. Nonetheless, our findings are important to consider as they highlight patient responsiveness among the integrated care clinics.

Our study findings should take into consideration the following limitations. First, our sample was not randomly recruited, which reduces our ability to generalize our results to all PWUD in Vancouver and across the province. In addition, our measurement of responsiveness primarily referred to primary care facilities in the Vancouver area and may not be relevant to other settings, although rates of healthcare avoidance were consistent with international literature (Biancarelli et al., 2019; Boucher et al., 2017; Drumm et al., 2005; Heath et al., 2016; Meyerson et al., 2021). Further, all of our measurements were self-reported and therefore may contain bias in recall or social desirability, which may have either under- or over-estimated the prevalence of care avoidance or qualities of care. Our ability to compare our findings with other samples of PWUD is also limited by the lack of research on the responsiveness of health systems among PWUD in general. We also did not measure the domain of access to social supports, which may be an important domain for PWUD as peer support in healthcare settings has been shown to have beneficial treatment outcomes specific to substance use (Bassuk et al., 2016; Lennox et al., 2021), and to help establish trust between providers and patients (Lennox et al., 2021). Further investigation on the responsiveness of these systems to PWUD is needed.

5.1 CONCLUSION

About a quarter of our community-recruited sample of PWUD in Vancouver, Canada reported avoiding healthcare due to past mistreatment, with chronic pain and infections being the most commonly reported health issues for which participants avoided care. Participants who avoided care were significantly more likely to report emergency department use, even after

adjustment for potential confounders. This study extends the current literature on PWUD's avoidance of healthcare through our finding that all domains of responsiveness were sub-optimal, particularly among those who avoided care, and particularly for domains of prompt attention, communication, and respect for dignity and autonomy. Enhancing the responsiveness of health systems can reduce potential negative interactions that may contribute to the avoidance of healthcare observed. Our findings offer several priority areas for action to improve the responsiveness of healthcare systems to PWUD. Further interventions at the health system level (e.g., improved clinical guidance for chronic pain management, implementation of treatment-on-demand models, increased staff training and cultural competency) are likely needed to improve PWUD's engagement in healthcare services.

Conflict of interest:

No conflicts of interest declared. The funding organizations (including those supporting MJM) had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.

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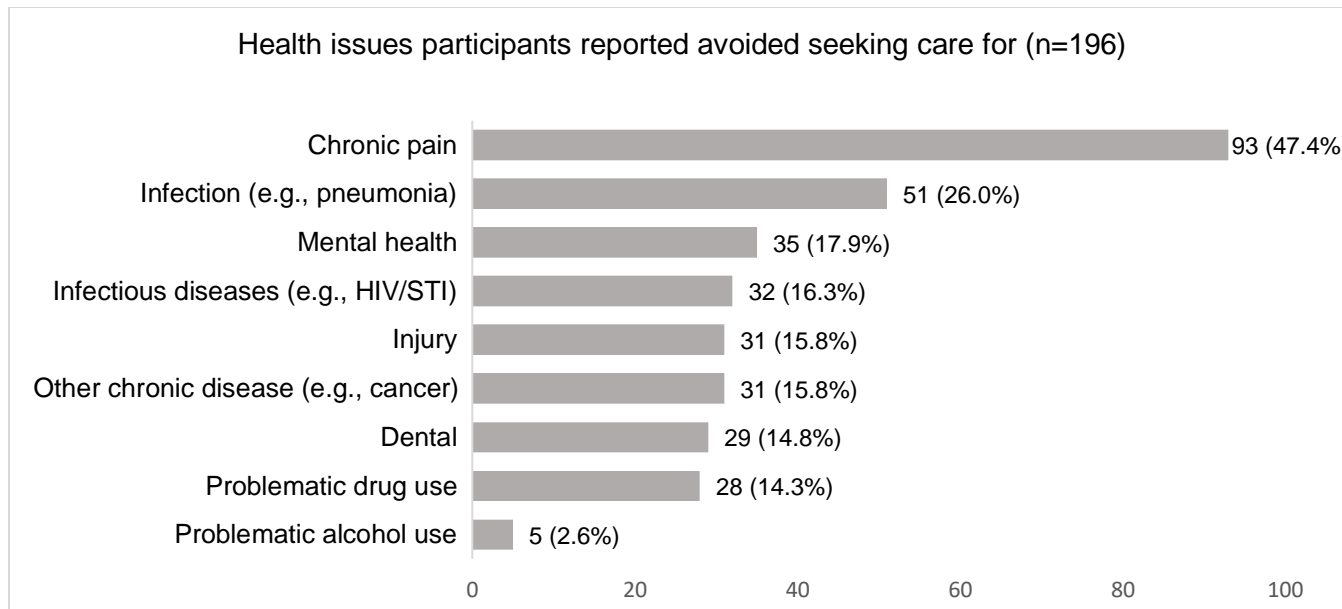


Figure 1. Health issues participants reported avoiding care for among people who use unregulated drugs (PWUD) (n=196) who reported a healthcare need, Vancouver, Canada. Participants could provide more than one response.

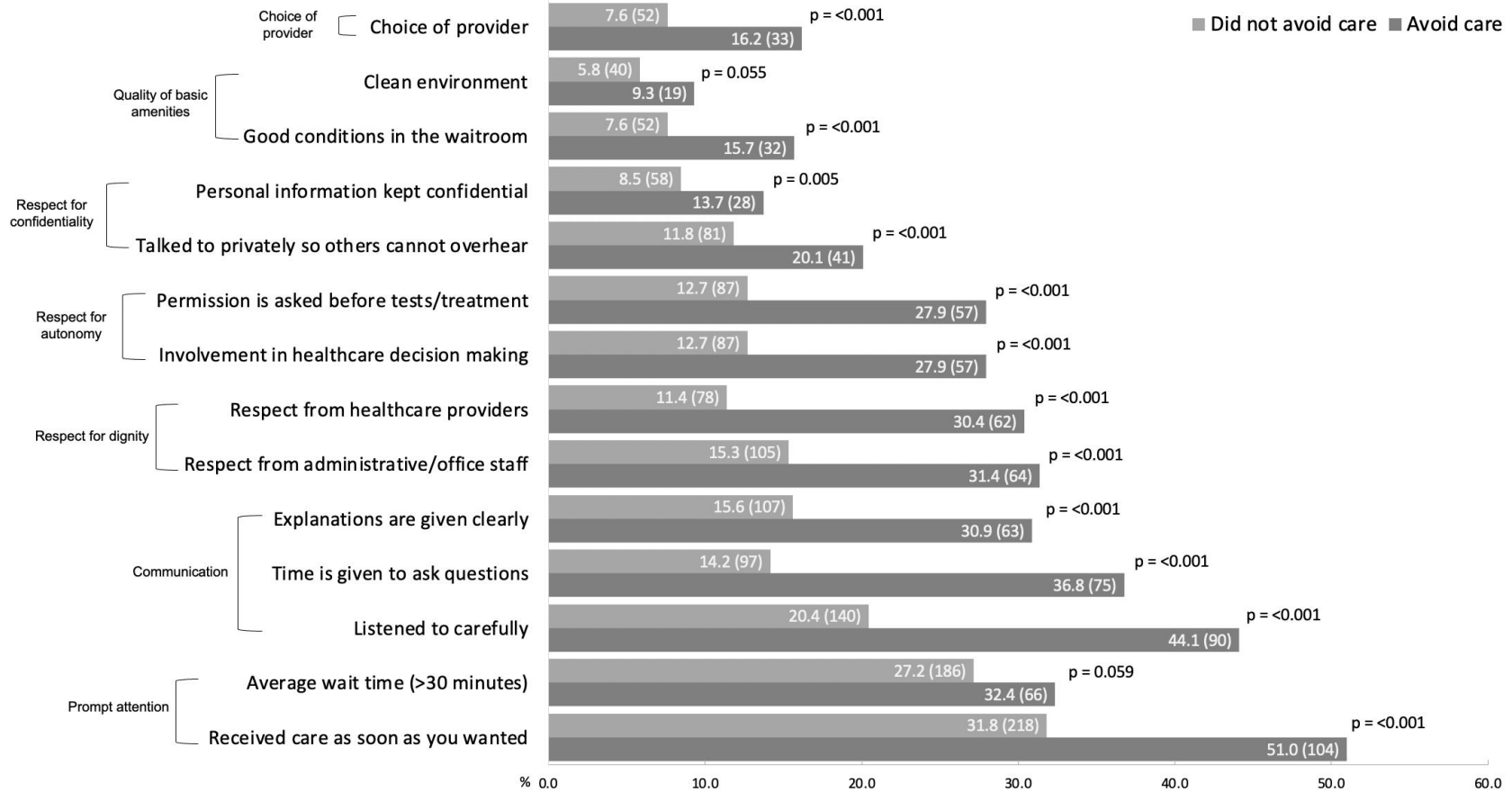


Figure 2. People who use unregulated drugs (PWUD) who reported suboptimal domains of responsiveness (not always) stratified by those who avoided care/did not avoid care in Vancouver, Canada (n=889). A two-sided Pearson chi-sq. test (χ^2) was used to identify differences between those who avoided and did not avoid care. Domains of responsiveness include: choice of provider, quality of basic amenities (clean environment, good conditions in the waitroom), respect for confidentiality (personal information kept confidential, talked to privately so others cannot overhear), respect for autonomy (permission is asked before tests/treatment, involvement in healthcare decision making), respect for dignity (respect from healthcare providers, respect from administrative/office staff), communication (explanations are given clearly, time is given to ask questions, listened to carefully), prompt attention (average wait time >30 minutes, received care as soon as you wanted). Respect for autonomy was assessed among a sub-set of the sample (n=561) who had a test- or treatment-related healthcare decision made in the past six months

Table 1. Questions used to ascertain responsiveness among people who use unregulated drugs (PWUD) in Vancouver, Canada

Domains of responsiveness	Question
Choice of provider	Is there more than one doctor, nurse, or other health care provider you can choose from?
Quality of basic amenities	
Cleanliness	Over the last 6 months, how would you rate the cleanliness of the place?
Conditions in the waiting room	Over the last 6 months how you rate the conditions in the waiting room? For example, space, seating, fresh air, accessibility (for people with disabilities), and/or safety?
Respect for confidentiality	
Personal information kept confidential	In the last 6 months, to your knowledge, how often did your doctor, nurse, or other health care provider keep your personal information confidential?
Talked to privately	In the last 6 months, how often were talks with your doctor, nurse or other health care provider done privately so that other people could not overhear what was said?
Respect for dignity	
Respect from healthcare providers	In the last 6 months, how often did doctors, nurses or other health care providers treat you with respect?
Respect from administrative/office staff	In the last 6 months, how often did the office staff, such as receptionists or clerks, treat you with respect?
Respect for autonomy	
Involvement in healthcare decision making	In the last 6 months, how often did doctors, nurses or other health care providers involve you as much as you wanted to be in deciding about treatment or tests?
Healthcare providers ask for permission before starting tests/treatment	In the last 6 months how often did doctors, nurses or other health care providers there ask your permission before starting tests or treatments?
Communication	
Healthcare providers listen carefully	In the last 6 months, how often did doctors, nurses, or other health care providers listen carefully to you?
Healthcare providers explain things in an understandable way	In the last 6 months, how often did doctors, nurses, or other health care providers explain things in a way that you could understand?
Healthcare providers give time to ask questions	In the last 6 months, how often did doctors, nurses, or other health care providers give you time to ask questions about your health problem or treatment?
Prompt attention	
Receiving care as soon as wanted	In the last 6 months, how often did you get care as soon as you wanted?
Average wait time	In the last 6 months, on average, how long did you usually have to wait in the waiting room to see a provider?

The domains of responsiveness were derived from the World Health Organization (WHO) Survey on Health and Health System Responsiveness.(Valentine et al., 2003)

Table 2. Baseline characteristics among people who use illicit drugs (PWUD) who report a healthcare need in the past six months in Vancouver, Canada (n=889)

Characteristics	Total n=889 (%)	Avoid care		P value*	Emergency department use		P value*
		Yes (n=204)	No (n=685)		Yes (n=238)	No (n=650)	
Avoided care	204 (22.9)	—	—	—	77 (32.4)	127 (19.5)	<0.001
Age (median, IQR)	47 (42–57)	47 (37–55)	51 (43–57)	<0.001	50 (39–56)	51 (42–57)	0.087
White (vs. BIPOC)	363 (40.8)	88 (43.1)	275 (40.1)	0.521	98 (41.2)	264 (40.6)	0.934
Male (vs. non-male)	520 (58.5)	108 (52.9)	412 (60.1)	0.045	127 (53.4)	392 (60.3)	0.058
Residence in the DTES	606 (68.2)	148 (72.5)	458 (66.9)	0.148	170 (71.4)	435 (66.9)	0.232
Homeless ^d	136 (15.3)	52 (25.5)	84 (12.3)	<0.001	51 (21.4)	85 (13.1)	0.003
Chronic pain	392 (44.1)	119 (58.3)	273 (39.9)	<0.001	121 (50.8)	271 (41.7)	<0.001
Infectious disease ^a	484 (54.4)	109 (53.4)	375 (54.7)	0.802	137 (57.6)	346 (53.2)	0.284
Chronic disease ^b	261 (29.4)	83 (40.7)	178 (26.0)	<0.001	88 (37.0)	173 (26.6)	0.004
PROMIS Anxiety ^c	221 (24.9)	82 (40.2)	139 (20.3)	<0.001	70 (29.4)	151 (23.2)	0.056
PROMIS Depression ^c	202 (22.7)	66 (32.4)	136 (19.9)	<0.001	64 (26.9)	138 (21.2)	0.059
Overdose ^d	102 (11.5)	31 (15.2)	71 (10.4)	0.076	45 (18.9)	57 (8.8)	<0.001
Daily drug use ^{d, e}							
Heroin	221 (24.9)	70 (34.3)	151 (22.0)	<0.001	70 (29.4)	150 (23.1)	0.064
Stimulants	249 (28.0)	68 (33.3)	181 (26.4)	0.066	69 (29.0)	180 (27.7)	0.766

IQR: Interquartile Range. CI: Confidence Interval. BIPOC: Black, Indigenous, and other Persons of Colour

DTES: Downtown Eastside of Vancouver

*Two-sided, Pearson chi-square test was used for categorical variables and Mann-Whitney U (Wilcoxon) test for continuous variables (age).

^a Includes those who reported requiring medical attention for an infectious disease (e.g., HIV/HCV/STI)

^b Includes those who reported requiring medical attention for a chronic disease (e.g., cancer, arthritis, heart disease, diabetes)

^c The Patient-Reported Outcome Measurement Information System (PROMIS) short form was used to assess anxiety/depression (moderate/severe vs. mild/none)

^d Denotes behaviours and events in the past six months

^e Injection or non-injection drug use

Table 3. Bivariable and multivariable analyses of the relationship between avoiding healthcare and emergency department use among people who use illicit drugs (PWUD) who report a healthcare need, Vancouver, Canada (n=889)

Characteristics	Unadjusted OR (95% CI)	P Value	Adjusted OR (95% CI)	P value
Avoided care	1.97 (1.41 - 2.75)	<0.001	1.49 (1.01 - 2.19)	0.043
Age (per year older)	0.99 (0.97 - 1.00)	0.061	1.00 (0.98 - 1.02)	0.776
White (vs. BIPOC)	1.02 (0.76 - 1.39)	0.874	1.03 (0.73 - 1.45)	0.881
Male (vs. non-male)	0.74 (0.55 - 1.00)	0.049	0.81 (0.57 - 1.16)	0.253
Homeless ^d	1.81 (1.23 - 2.66)	0.002	1.72 (1.07 - 2.73)	0.024
Chronic pain	1.79 (1.30 - 2.46)	<0.001	1.60 (1.13 - 2.26)	0.009
Infectious disease ^a	1.19 (0.88 - 1.61)	0.251	1.19 (0.85 - 1.67)	0.320
Chronic disease ^b	1.62 (1.18 - 2.22)	0.003	1.42 (0.98 - 2.05)	0.060
PROMIS Anxiety/Depression ^c	1.32 (0.96 - 1.80)	0.082	1.00 (0.69 - 1.44)	0.990
Overdose ^d	2.43 (1.58 - 3.70)	<0.001	2.20 (1.36 - 3.55)	0.001
Daily drug use ^{d, e}				
Heroin	1.39 (0.99 - 1.93)	0.703	1.25 (0.85 - 1.85)	0.256
Stimulants	1.07 (0.77 - 1.48)	<0.001	0.96 (0.66 - 1.38)	0.821

OR: Odds ratio. CI: Confidence interval. BIPOC: Black, Indigenous, and other Persons of Colour

^a Refers to those who reported requiring medical attention for an infectious disease (e.g., HIV/HCV/STI)

^b Refers to those who reported requiring medical attention for a chronic disease (e.g., cancer, arthritis, heart disease, diabetes)

^c The Patient-Reported Outcome Measurement Information System (PROMIS) short form was used to assess anxiety and depression. The categories of moderate/severe anxiety and depression were combined (moderate/severe vs. mild/none).

^d Denotes behaviours and events in the past six months

^e Injection or non-injection drug use

Table 4. Domains of responsiveness among three primary care types (n=889)

Domains (%)	Other facilities ^d (n=324)	Integrated care clinic (n=203)	Community health centre (n=299)	<i>P</i> value for Pearson's χ^2
Prompt attention:				
Care as soon as you wanted ^a	96 (29.6)	93 (45.8)	130 (43.5)	<0.001
Average wait time (>30 minutes vs. ≤30 minutes)	83 (25.6)	81 (39.9)	85 (28.4)	0.002
Respect for autonomy*:				
Involvement in healthcare decision making ^a	60 (28.2)	36 (26.1)	50 (23.8)	0.541
Healthcare providers ask for permission before starting tests/treatment ^a	60 (28.2)	36 (26.1)	50 (23.8)	0.541
Respect for dignity:				
Respect from healthcare providers ^a	56 (17.3)	32 (15.8)	50 (16.7)	0.895
Respect from administrative/office staff ^a	50 (15.4)	52 (25.6)	65 (21.7)	0.039
Respect for confidentiality:				
Personal information kept confidential ^a	29 (9.0)	19 (9.4)	38 (12.7)	0.247
Talked to privately so others cannot overhear ^a	36 (11.1)	36 (17.7)	50 (16.7)	0.060
Communication:				
Healthcare providers listen carefully ^a	81 (25.0)	55 (27.1)	92 (30.8)	0.283
Healthcare providers explain things in an understandable way ^a	65 (20.1)	39 (19.2)	64 (21.4)	0.828
Healthcare providers give time to ask questions ^a	61 (18.8)	40 (19.7)	69 (23.1)	0.402
Choice of provider ^b	37 (11.4)	14 (6.9)	34 (11.4)	0.073
Quality of basic amenities:				
Clean environment ^c	14 (4.3)	23 (11.3)	21 (7.0)	0.048
Conditions in the waitroom ^c	21 (6.5)	27 (13.3)	35 (11.7)	0.018

*Respect for autonomy was assessed among a sub-set of the sample (n=561) who had a test- or treatment-related healthcare decision made in the past six months

^a Not Always vs. Always

^b Somewhat of a problem/Quite a problem vs. Not a problem

^c Poor/very poor vs. very good/good

^d Addiction treatment clinic, a private clinic or doctor, a hospital outpatient unit, or a low threshold service including a mobile clinic/outreach healthcare or low barrier/supportive housing.