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The role of gender in experiences of substance use-related stigma and injection drug use  
initiation processes: An intersectional approach

A dissertation submitted in partial satisfaction of the requirements for the degree Doctor of  
Philosophy

in

Interdisciplinary Research on Substance Use

by

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Professor María Luisa Zuñiga

2020

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Chair

University of California San Diego

San Diego State University

2020

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Chapter 2, “The intersection of gender and substance use-related stigma: A mixed methods systematic review and synthesis of the literature” is currently under review in *Social Science and Medicine*. Laramie Smith, Valerie Earnshaw, Brittany D'Ambrosio, Natasia Courchesne, and Dan Werb are co-authors. Stephanie Meyers, the dissertation author, is the primary author of this material.

Chapter 3, “Examining the gender composition of drug injecting events: A mixed methods investigation of three North American contexts” is currently being prepared for submission to the *International Journal of Drug Policy*. Claudia Rafful, Maria Luisa Mittal, Laramie Smith, Sonia Jain, Xiaoying Sun, Judit Tirado Muñoz, Richard Garfein, Steffanie Strathdee, Kora DeBeck, Kanna Hayashi, Ryan McNeil, M-J Milloy, Michelle Olding, Andrew Guise, Dan Werb, and Ayden Scheim are co-authors. Stephanie Meyers, the dissertation author, is the primary author of this material.

Chapter 4, “Gender and time to the provision of injection initiation assistance among people who inject drugs across two distinct North American contexts: Tijuana, Mexico and Vancouver, Canada” is currently being prepared for submission to *Drug and Alcohol Dependence*. Sonia Jain, Xiaoying Sun, Charles Marks, M-J Milloy, Kora DeBeck, Kanna Hayashi, Steffanie Strathdee, and Dan Werb are co-authors. Stephanie Meyers, the dissertation author, is the primary author of this material.

## VITA AND PUBLICATIONS

### VITA

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### PUBLICATIONS

#### Published

1. Courchesne, N. & **Meyers, S. A.** Women and Pregnancy. (2020). In C. Marienfeld (Ed.): *Absolute Addiction Psychiatry Review: An Essential Board Exam Study Guide* (pp. 259-275). Berlin, Germany: Springer.
2. **Meyers, S. A.**, Smith, L.R., Mittal, M. L., Strathdee, S. A., Garfein, R. S., Guise, A., Werb, D., & Rafful, C. (2019). The role of gender and power dynamics in injection initiation events within intimate partnerships in the US-Mexico border region. *Culture, Health & Sexuality*, 1-16.
3. **Meyers, S. A.**, Scheim, A., Jain, S., Sun, X., Milloy, M.J., DeBeck, K., Hayashi K., Garfein, R. S., & Werb, D. (2018). Gender differences in the provision of injection initiation assistance: A comparison of three North American settings. *Harm Reduction Journal*, 59(15), 1-5.

#### Submitted and Under Review

1. **Meyers, S. A.**, Smith, L.R., & Werb, D. Preventing transitions into injection drug use: A call for gender-responsive prevention efforts. *International Journal of Drug Policy*. Manuscript under review.
2. **Meyers, S. A.**, Rafful, C., Jain, S., Sun, X., Skaathun, B., Guise, A., Gonzalez-Zuniga, P., Strathdee, S. A., Werb, D., & Mittal, M. L. Achieving harm reduction goals to address injection initiation assistance in Tijuana, Mexico: The role of drug treatment and recovery services. *Substance Abuse Treatment, Prevention and Policy*. Manuscript under review.
3. Marks, C., **Meyers, S. A.**, Jain, S., Sun, X., Hayashi, K., Gonzalez-Zuniga, P., Strathdee, S., Garfein, R. S., Milloy, M-J, DeBeck, K., Cummins, K., & Werb, D. (2020). The involvement of people who inject drugs in injection initiation events: Identifying



similarities and differences across three North American settings. *Addiction*. Manuscript under review.

4. **Meyers, S. A.**, Earnshaw, V. A., D'Ambrosio, B., Courchesne, N., Werb, D., & Smith, L. R. (2020). The intersection of gender and substance use-related stigma: A mixed methods systematic review and synthesis of the literature. *Social Science and Medicine*. Manuscript under review.

## ABSTRACT OF THE DISSERTATION

The role of gender in experiences of substance use-related stigma and injection drug use initiation processes: An intersectional approach

by

Stephanie A. Meyers

Doctor of Philosophy in Interdisciplinary Research on Substance Use

University of California San Diego, 2020

San Diego State University, 2020

Professor Dan Werb, Chair

**Background:** Women who inject drugs (WWID) are disproportionately impacted by injection-related harms and substance use-related stigma. Guided by an integration of the Stigma and Substance Use Process Model and the Risk Environment Framework, this dissertation sought to further elucidate the impact of gender on substance use stigma and injection drug use trajectories.

**Methods:** This dissertation includes a systematic review of substance use-related stigma (Chapter 2) and mixed methods analyses from three prospective cohorts of people who inject

drugs (PWID) linked within the *Preventing Injecting by Modifying Existing Responses* (PRIMER) study. Cohorts provide data from San Diego, USA ( $n = 352$ ) (Chapter 3), Vancouver, Canada ( $n = 1,739$ ) (Chapters 3 & 4), and Tijuana, Mexico ( $n = 531$ ) (Chapters 3 & 4). Chapter 2 systematically reviews the scientific literature on the intersection of gender- and substance use-related stigma. Chapter 3, using a mixed methods approach, examines how gender influences the risk environment for processes of injection initiation. Chapter 4 applies discrete time survival analyses to assess the association between gender and the provision of first-time injection initiation assistance.

**Results:** Of the 75 articles (Quantitative:  $n = 40$ ; Qualitative:  $n = 35$ ) included in Chapter 2, 23(57.5%) quantitative articles reported no association between gender and substance use-related stigma, whereas 34(97.1%) qualitative articles reported women experienced greater substance use stigma than men. Chapter 3 findings demonstrated a greater proportion of gender concordant (e.g., male-male vs. male-female) ‘assister’ and ‘assistee’ injection initiation pairs among PWID in Tijuana compared to Vancouver or San Diego. The gendered spatial risk environment of prisons/jails in Tijuana and social risk environments of intimate partnerships and caring in San Diego and Vancouver, respectively, likely explain differences in gender concordance of assister-assistee pairs by setting. Chapter 4 findings demonstrate that, compared to WWID, women were nearly 50% less likely to provide first-time injection initiation assistance in Tijuana, but not in Vancouver.

**Conclusions:** These findings illustrate the need for intersectional approaches to research on the influence of gender on stigma- and injection drug use-related processes. Furthermore, these results can inform the development of critically needed gender- and site-specific injection prevention and intervention efforts.

## CHAPTER 1: INTRODUCTION

### OVERVIEW

Gender is critical in influencing substance use behaviors and injection drug use initiation processes.<sup>1-6</sup> Despite the field of substance use research having historically applied a gender-neutral or male-centric lens,<sup>7,8</sup> approximately one quarter to one third of North American people who inject drugs (PWID) cohorts are made up of women.<sup>9-12</sup> Additionally, women who inject drugs (WWID) make up a particularly vulnerable subpopulation given that they are more likely to share injection preparation equipment with the person assisting them in initiating injection drug use,<sup>13</sup> and to be injected after the ‘assister’,<sup>1,6</sup> which places WWID at heightened risk for injection-related harms (i.e., bacterial infection, abscess, HIV, HCV, and physical harm from being injected by someone who is intoxicated).<sup>1-4,6,13</sup> WWID are also at significant risk for overdose death, especially given the current availability of fentanyl, a high potency, synthetic opioid. Estimates from 2019 demonstrate that there was a 260% increase in the rate of opioid-related overdose deaths among women aged 30-64 years old in the United States between 1999-2017,<sup>14</sup> further underscoring the vulnerability of WWID and the importance of understanding the role of gender in injection-related processes.

Past literature has also highlighted the importance of geographical context for injection drug use behavior. Tijuana, Mexico, San Diego, USA, and Vancouver, Canada are three North American contexts along a drug trafficking corridor that supplies heroin, cocaine, and methamphetamine from Mexico through the United States and into Canada.<sup>15,16</sup> Furthermore, these three North American contexts have been adversely impacted by the ongoing opioid overdose epidemic<sup>17-19</sup> and PWID populations in these regions demonstrate elevated levels of HIV and HCV prevalence.<sup>20-22</sup> Recent research has also demonstrated that these North American

regions differ in the observed influence of gender on injection initiation processes. For example, in Tijuana, men have been found to be over twice as likely to provide injection initiation assistance when compared to women, though this gender difference was not found within cohorts of PWID in San Diego or Vancouver.<sup>23</sup> As such, the geographic and sociocultural contexts of San Diego, USA, Tijuana, Mexico, and Vancouver, Canada are important regions for investigating the influence of gender on substance use trajectories.

In addition to the aforementioned injection-related harms for WWID, those with substance use disorders remain one of the most stigmatized groups in the world,<sup>24,25</sup> with intersectional gender-related stigma compounding this stigmatization further.<sup>7,26</sup> Experiences of stigma negatively impact psychological well-being<sup>24</sup> and create significant barriers to accessing and utilizing health care, screening for drug misuse, and drug treatment services among drug using and PWID populations.<sup>25,27,28</sup> Further, there is limited evidence that women who use drugs (WWUD) report feeling greater internalized stigma when accessing treatment for substance use disorders compared to men who use drugs (MWUD).<sup>29</sup> Consequently, there is a need to further elucidate how experiences of stigma may be different for MWUD and WWUD.

Furthermore, research efforts have sought to understand the processes by which individuals begin injecting drugs in an effort to prevent transitions into this mode of drug consumption, and thereby reduce the incidence of injection-related harms. Importantly, there is a growing understanding that PWID play an integral role in the process of injection drug use initiation, with 68% to 88% of novice PWID reporting being assisted, educated, and/or physically injected by another person the first time they inject.<sup>30</sup> As such, research is needed to understand the factors that influence PWID's provision of injection initiation assistance, like

gender and geographic context, in order to inform efforts targeting the reduction of transitions into drug injecting and subsequent injection-related harms

While gender- and context-related injection initiation processes and harms are well documented, less is known regarding the specific gendered pathways, social contexts, and vulnerabilities within substance use stigma and injection drug use initiation processes. For example, though the impact of gender on PWID's own injection initiation experiences has been established,<sup>1-4,6</sup> relatively little is known regarding the gendered contexts surrounding PWID's provision of injection initiation assistance to others. Relatedly, while the negative impacts of substance use-related stigma are understood,<sup>24,25</sup> theorists argue that there is a greater need for intersectional approaches to stigma research,<sup>31</sup> with gender being an important intersectional identity to investigate. As such, the current dissertation sought to evaluate how gender shapes the experiences and processes of substance use-related stigma and injection initiation trajectories.

## **BACKGROUND**

### **Drug Misuse and Related Harms**

North America is currently facing an opioid-related overdose epidemic; one the United States Department of Health and Human Services declared a public health emergency in 2017.<sup>17</sup> In 2018 there were 67,367 overdose deaths in the United States, representing 20.7 deaths per 100,000.<sup>17</sup> Furthermore, research has demonstrated that, between 1999 and 2017, despite a greater crude incidence of overdose mortality among men in the United States, there were large increases in overdose deaths among women aged 30-64 years (260% increase) and aged 55-64 years (500% increase).<sup>14</sup> Drug injecting is a key risk factor for overdose, especially given the availability of high potency, synthetic opioids such as fentanyl.<sup>32</sup> Additionally, mortality is higher than expected for those that have recently transitioned into injection drug use (i.e.,

injecting for fewer than five years), with the leading causes of death being overdose, trauma, AIDS, and self-inflicted injury. This suggests that those that are new to injection drug use are a population at increased risk of opioid overdose morbidity and mortality, disease transmission, and other related harms.<sup>33</sup>

This is of concern, given that people who inject drugs (PWID) are also disproportionately affected by infections such as HIV and hepatitis C (HCV).<sup>34</sup> Indeed, it is estimated that 1.7 million of PWID worldwide are currently infected with HIV, comprising 10% global HIV infections, and that the global prevalence of HCV is 67% for PWID.<sup>34</sup> Furthermore, new PWID are reportedly at an even greater risk of infection within the first few years of initiating injection drug use.<sup>13,35</sup> This is likely due to the reliance of novice PWID on more experienced PWID to help them learn the skills necessary to inject, and consequently their sharing of drug preparation equipment, like syringes, with those assisting them.<sup>13,35</sup> These findings indicate that novice PWID are an especially vulnerable population that could benefit from informed harm reduction and prevention efforts.

### **Substance Use-Related Stigma**

Stigma, as originally defined by Erving Goffman in 1963, is an, “attribute that is deeply discrediting” and serves to diminish an individual from, “a whole and usual person to a tainted, discounted one.”<sup>36</sup> Since the emergence of this original definition, the conceptualization of stigma has been broadly defined by Link and Phelan (2006) as a multilevel, social process by which individuals are devalued based on group membership.<sup>37</sup> Link and Phelan (2006) have also identified stigma as the convergence of a variety of phenomena: (1) the labeling of differences among humans, (2) the linking of labeled people, by dominant society, to negative characteristics (i.e., stereotypes), (3) the separation of labeled people into distinct categories, and (4) the

experience of a loss of status and discrimination resulting in uneven outcomes for labeled people.<sup>38</sup> Researchers within this field have also posited that there are a four different types of stigma for individuals that belong to a stigmatized group: perceived, internalized, enacted, and anticipated.<sup>24</sup> Perceived stigma refers to the process in which stigmatized individuals believe that most people associate negative stereotypes with people from their stigmatized group.<sup>24</sup> Internalized stigma, sometimes referred to as self-stigma, is the negative thoughts, feelings, and self-devaluation that result from identifying with a particular stigmatized group.<sup>24</sup> Enacted stigma, however, refers to the direct experiences of rejection and discrimination of individuals from members of larger society as a result of their group membership.<sup>24</sup> Lastly, anticipated stigma is the process through which individuals come to expect rejection and negative behaviors from members of larger society in response to their group membership and stigmatized identity.<sup>24</sup>

Though much of the literature has focused on stigma as it relates to mental illness and HIV, the moralization, criminalization, and stigmatization of drug use is a commonality across most modern societies.<sup>24,25</sup> Additionally, in order to have a fulsome understanding of stigma processes, it is important to understand the perspectives of those who do not use drugs towards drug use.<sup>39-41</sup> For example, in a review of the literature on health professional's perceptions of substance use, it was found that nurses often attributed illicit substance use to "a failing character" and endorsed the idea that people who use drugs pose a threat to society.<sup>39</sup> This is further exemplified in the 2010 United States budgetary federal spending decisions in which 65% of spending was allocated for criminal sanctions related to drug use, whereas 35% was allocated towards drug prevention, research, and treatment.<sup>24</sup> Though reports from 2020 indicate that the United States budgetary federal spending is trending towards the equal allocation of



funds for criminal sanctions and drug prevention, research, and treatment,<sup>42</sup> these policy choices ultimately reflect the belief that individuals who use substances are deserving of punitive treatment as opposed to rehabilitation.<sup>24</sup> This is problematic given that a systematic review of 26 empirical articles focused on stigma among non-treatment involved individuals with substance use disorders consistently found that substance use stigma had a deleterious effect on psychological well-being.<sup>24</sup>

Of additional concern, stigma is an important barrier to treatment utilization for substance use disorders.<sup>24,25</sup> Specifically, substance use stigma can prevent individuals from disclosing their drug use to health care providers, which undermines the therapeutic relationship and can have detrimental effects on their physical health and well-being (i.e., increase symptoms of depression and anxiety).<sup>24</sup> Additionally, health care professionals have been observed ascribing the stereotypes of poor motivation, violence, and manipulation to their patients with substance use disorders.<sup>43</sup> These negative attitudes held by health professionals have been shown to contribute to patients' feelings of disempowerment and serve to adversely impact health utilization and treatment outcomes.<sup>43</sup> Consequently, it is important to understand how substance use stigma impacts the processes, trajectories, and health outcomes for persons who use drugs (PWUD).

### **Intersectionality**

Despite drug use being a heavily stigmatized behavior,<sup>24,25</sup> theorists have criticized past stigma literature for neglecting to adopt an intersectional approach for research on stigma and stigma-related factors.<sup>26</sup> Intersectionality, as a theoretical lens, serves to call attention to the intersecting and overlapping experiences of oppression experienced by individuals who embody various aspects of diversity, including but not limited to gender, racial, ethnic, sexual, and

socioeconomic identities.<sup>31</sup> Employing an intersectional lens allows us to better attend to, and address, the multiple, intersecting systems of oppression (i.e., gender bias and risk environments) that shape individual's lives and either perpetuate inequalities or promote resilience.<sup>31</sup>

### **Intersectional Approaches to Stigma**

To further underscore the need for intersectional stigma research, past literature has found that WWUD experience an even greater burden of stigma.<sup>24,25</sup> Indeed, WWUD have been shown to display higher levels of shame (i.e., internalized stigma) compared to MWUD.<sup>25</sup> These limited findings also indicate that WWUD may be especially vulnerable to violence, coercion, and barriers to accessing and utilizing care.<sup>25</sup> To our knowledge, however, no systematic review exists examining the intersection of gender and substance use-related identities. There is, however, a critical need to synthesize the existing knowledge base surrounding the intersection of gender and substance use-related stigma, to determine how this intersectionality influences substance use-related outcomes.

### **Gender Differences in Substance Use Processes**

Historically, most substance misuse research has either focused on male populations,<sup>7</sup> or taken a gender-neutral approach,<sup>8</sup> leaving important gendered gaps in the literature. In recent years, however, the scientific community has recognized that there are meaningful biopsychosocial gender differences in substance use processes, trajectories, and related harms.<sup>7</sup> It is important to note, however, that the bulk of the existing research investigating these biopsychosocial gender differences in substance use- and injection drug use-related processes have focused on binary gender comparisons (i.e., comparing MWUD and WWUD), effectively excluding transgender individuals from these gendered comparisons.<sup>8</sup> As such, this review of the literature on gendered substance use processes is focused on MWUD and WWUD populations,

and it is recommended that future research include transgender populations to better attend to their unique substance use-related trajectories and vulnerabilities.<sup>8</sup> In regards to existing sex-related comparisons of substance use, it has been found women become intoxicated from drinking smaller amounts of alcohol and have higher blood alcohol concentrations compared to men.<sup>7</sup> Furthermore, women who are substance dependent have also been found to have higher rates of, and progress faster to, medical consequences such as; liver problems, hypertension, anemia, gastrointestinal problems, infertility, vaginal infections, miscarriage, and premature delivery.<sup>7</sup> This suggests that there are significant sex-related biological mechanisms and metabolic factors related to substance use and dependence.<sup>7</sup>

Furthermore, research examining substance use initiation in adolescents has determined that, though men and women initiate substance use at similar rates, men ultimately increase their substance use at faster rates.<sup>44</sup> Interestingly, it has also been found that some women progress from initiation to treatment entry quicker than their male counterparts.<sup>44</sup> Additionally, there is evidence that men and women differ in regards to the specific types of substances misused.<sup>45</sup> For example, data from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) study, a nationally representative sample of adults in the United States, demonstrated that men had a significantly higher prevalence of alcohol and cannabis dependence, whereas women had higher rates of amphetamine dependence.<sup>45</sup>

On an interpersonal level, women with substance use disorders are also more likely to have come from families in which one or more members are substance dependent, to have experienced more disruption in their families, to be in relationships with substance misusing partners, to cite relationship problems as a contributor to their own substance misuse,<sup>7</sup> to be diagnosed with a mood or anxiety disorder,<sup>7,46</sup> to exchange sex for money or drugs,<sup>7</sup> and to have

a history of intimate partner violence.<sup>7</sup> These findings indicate that there are also specific gendered contexts and processes in which women become exposed to the use and misuse of substances.

These gender differences in drug use processes are also evident among PWID, particularly within injection initiation trajectories. More specifically, WWID are more likely to have been assisted in their initiation by a male sexual partner/spouse whereas men are more likely to have been assisted into injection by a casual acquaintance.<sup>1,6</sup> During their initiation events, women may be at even greater risk of blood borne pathogens due to increased rates of equipment sharing<sup>13</sup> and being more likely to be injected after the person assisting them in injection initiation.<sup>1,6</sup>

Past research also suggests interpersonal contexts can be a potential source of vulnerability, especially for WWID.<sup>2-4</sup> In a qualitative investigation of gender dynamics within injection-related intimate partnerships undertaken in New York, USA, men were found to most often be the person assisting their female partners in injection initiation.<sup>4</sup> This investigation also revealed a number of reasons why injection initiation assistance was provided within intimate partnerships. These included the desire of one partner to share the drug use experience and the high, to increase intimacy and/or relationship satisfaction, and to counteract a partner's increasing tolerance and/or the increasing economic cost of non-injectable drug use.<sup>4,47</sup> Qualitative narratives from studies in both New York City, USA and Leeds, United Kingdom have also highlighted injection initiation experiences during which women were coerced or forced to inject.<sup>3,4</sup> Reports from the women detailed that the decision to switch from non-injection to injection drug use was due to their male partner's inability to afford or obtain enough drugs to combat the couple's increasing tolerance.<sup>3</sup> This may lead women to feel coerced into

injection by their male partners as a response to economic constraints, while also being dependent upon their partners who they entrusted to inject them the first time.<sup>3</sup> These accounts of forced or coerced initiation suggests the unique emotional and physical vulnerability that some women face with respect to their transition into drug injecting. These injection-related processes, coupled with WWID's vulnerability to physical and sexual violence,<sup>5</sup> highlight the need for a greater understanding of gender-specific interventions to prevent injection drug use, to reduce the unique injection-related harms that women experience, and to tailor treatment services for this population.

Injection initiation processes, however, can present in a variety of forms and be linked to potentially complex relationship dynamics.<sup>4,48</sup> For example, injection drug use initiation can result from women's requests for, and active participation in initiation.<sup>4,48</sup> Men can also experience a "burden of care" in drug using relationships, by assuming the risk of obtaining street-based drugs for themselves and their partners.<sup>4</sup> Men are also often responsible for the cost of maintaining both their own and their partner's drug supply,<sup>4</sup> illustrating the common occurrence of gendered divisions of labor within injection drug use-involved intimate partnerships. There are, however, also accounts of men being assisted in injection initiation by their female partners.<sup>4,48</sup> In these accounts, men were still responsible for obtaining the drugs used within the relationship, but their female partners were experienced PWID and able to assist them in drug injecting.<sup>4,48</sup> These findings illuminate the multifaceted nature of gendered power dynamics within substance use and injection initiation processes, particularly for WWUD in intimate partnerships, and highlight the need for greater exploration of the intersection of gender, substance use, and related risks.<sup>48</sup>

## **The Geographic Context for Injection Initiation**

### **The San Diego-Tijuana International Metropolitan Region**

Geographical context is a key factor influencing substance use-related stigma, injection drug use-related harms, and the effects of drug policy interventions. The Tijuana-San Diego region is a key link along a drug trafficking chain that supplies heroin, cocaine, and methamphetamine from Mexico into the United States and up to Vancouver, Canada,<sup>16</sup> making this a critical region in which to understand drug injecting practices. The cities of San Diego, USA and Tijuana, Baja California, Mexico are an international, metropolitan region that is home to a large binational population of PWID. Cross-border travel between the United States and Mexico is common, and the San Ysidro border crossing between San Diego and Tijuana is one of the busiest land border crossing locations in the world.<sup>15,49</sup> This border region exhibits high rates of injection drug use<sup>21</sup> and most recent estimates demonstrate that the PWID within this binational context have elevated HIV (Tijuana: 4-10%; San Diego: 4%), and HCV prevalence (Tijuana: 96%; San Diego: 27-51%).<sup>15,21,50,51</sup> Research has also demonstrated that PWID in this border region engage in high-risk injecting behaviors<sup>52,53</sup> with an estimated 15-27% of PWID in San Diego engaging in cross-border injection drug use,<sup>53,54</sup> and with cross-border injection drug use being associated with distributive needle sharing practices.<sup>53</sup> Furthermore, PWID Tijuana have reported engaging in syringe and drug preparation equipment sharing, placing PWID in this border region at increased risk of infection.<sup>52</sup> Little is known, however, regarding the role of gender in binational mobility and high-risk injection practices.

Recent research has also demonstrated that there are significant gender differences in the provision of injection initiation assistance in Tijuana, with men being over twice as likely to provide injection initiation assistance compared to women.<sup>55</sup> Additionally, this gender difference

was not found within PWID in San Diego or Vancouver.<sup>55</sup> Past research has also indicated that greater proportions of PWID in Tijuana report stigma, discrimination, and harassment from law enforcement officers compared to their counterparts in San Diego.<sup>56</sup> Furthermore, evidence suggests that the presence of traditional gender norms within Northern Mexico may limit the acceptability of substance use and injection initiation provision among women in that region.<sup>48,57</sup>

As a result, high-risk behaviors coupled with high levels of PWID mobility in the San Diego-Tijuana region create increased risk of disease transmission, including HIV and HCV, for PWID in this border region. However, little is known about the granular-level gendered contexts and processes that contribute to injection initiation processes and related risk in this geographical area.

### **Vancouver, British Columbia, Canada**

Vancouver, Canada has been severely impacted by the ongoing opioid overdose epidemic in North America. The Canadian Institute for Health Information (2018) reported that there were 16 opioid-related poisonings requiring hospitalization each day for the 2016-2017 year; a 19% increase from the previous year.<sup>58</sup> For 2019, there were a reported 2,913 opioid-related overdose fatalities across Canada,<sup>59</sup> 786 (27%) of which were within the province of British Columbia (most occurring in the city of Vancouver).<sup>60</sup> The Downtown Eastside (DTES) neighborhood of Vancouver, in which 80% of residents identify as a PWUD,<sup>61</sup> is the site of an open, street-based drug market.<sup>62</sup> PWID in this neighborhood are at increased risk for injection-related harms, and residence in the DTES neighborhood is independently associated with initiating injection drug use.<sup>61</sup> In an effort to combat these drug- and injection-related harms, Vancouver has implemented various harm reduction strategies, including having multiple supervised injection facilities (SIFs). One such SIF in the DTES neighborhood, InSite, has successfully reduced the

amount of syringe sharing among clients, decreased the amount of public injecting, increased attendance for detoxification programs, and helped clients adopt safer injection practices.<sup>63</sup> Additionally, the first women-only SIF in Canada, SisterSpace, is located in the DTES neighborhood. WWUD report that this harm reduction service provides a safe space that is free from the discrimination and gender-based violence that WWUD fear when accessing other mixed gender SIFs.<sup>64</sup> This convergence of the opioid overdose epidemic, neighborhood influences, and harm reduction strategies make Vancouver an important sociocultural context in which to better understand the influence of gender on injection initiation processes.

## **CONCEPTUAL FRAMEWORK**

The current research was guided by an intersectional lens and informs the integration of two theory-based approaches: (1) the Stigma and Substance Use Process Model and (2) Rhodes' Risk Environment Framework. A detailed discussion of each of the theoretical approaches and the integration of these theories follows.

### **Stigma and Substance Use Process Model**

The Stigma and Substance Use Process Model<sup>65,66</sup> developed by Smith and Earnshaw (2018; see Figure 1.1) describes both: (1) how social stigma is associated with behaviors that place individuals at risk for developing substance use disorders (i.e., the top half of Figure 1.1), and (2) how substance use-related stigma, and the intersection of substance use-related stigma and other stigmatized characteristics, serve to undermine improved health outcomes among people who use drugs (i.e., the bottom half of Figure 1.1).<sup>65,66</sup>

This model also delineates that social stigma is experienced at three levels: structural, interpersonal, and individual.<sup>65,66</sup> The structural experiences of stigma consist of the ways in which stigma is manifested in social structures via policies, laws, and institutions.<sup>65,66</sup> Stigma, as

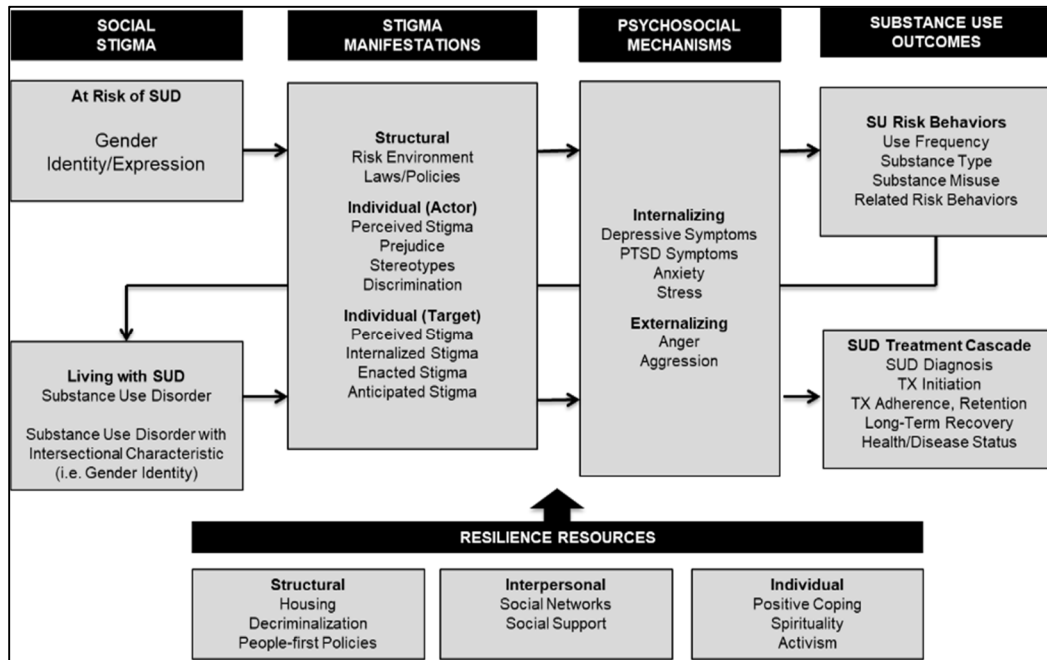


a social construct, is also reflected in the ways non-stigmatized individuals (actors) propagate stigma, also referred to as interpersonal manifestations, that consist of: (1) perceived stigma, (2) prejudice, (3) stereotypes, and (4) discrimination.<sup>65,66</sup> Perceived stigma refers to the extent to which individuals perceive a characteristic or group to be socially devalued within society.<sup>65,66</sup> Individuals do not have to agree with, or endorse, this stigma to perceive it exists. Prejudice is the affective component of interpersonal manifestations of stigma, and refers to the negative orientations individuals have towards stigmatized groups (i.e., anger, fear, disgust, etc.).<sup>65,66</sup> Stereotypes are the false cognitions and attributions of specific characteristics that individuals have towards socially devalued groups or characteristics.<sup>65,66</sup> Lastly, discrimination refers to the unfair behavior towards, or treatment of, those with socially devalued group membership or characteristics.<sup>65,66</sup>

Experiences of social stigma among individuals (targets) within a socially devalued group or with socially devalued characteristics, referred to as individual manifestations of stigma, consist of: (1) perceived stigma, (2) internalized stigma, (3) enacted stigma, and (4) anticipated stigma.<sup>65,66</sup> Perceived stigma, at the individual level, refers to the extent to which individuals feel that their group is socially devalued within society.<sup>65,66</sup> Individuals do not have to personally experience stigma to perceive that the stigma exists.<sup>65,66</sup> Internalized stigma, however, refers to the devaluing and discrediting of oneself due to one's characteristics or group membership.<sup>65,66</sup> Enacted stigma consists of individuals being mistreated based on their socially devalued characteristics or group membership.<sup>65,66</sup> Lastly, anticipated stigma consists of individuals' expectations of being mistreated in the future as a result of their socially devalued group membership or characteristics.<sup>65,66</sup> Within the Stigma and Substance Use Process model, it is further hypothesized that these three levels of stigma manifestation (i.e., structural,

interpersonal, and individual) impact a stigmatized individual’s psychological well-being, which in turn impacts substance use-related outcomes (i.e., substance use-related risk behaviors or the substance use disorder treatment cascade).<sup>65,66</sup> Additionally, this model posits that resilience resources (i.e., housing, social support, positive coping strategies, etc.) buffer against the negative effects experienced as a result of social stigma.<sup>65,66</sup>

This process model guided and informed a larger systematic review on substance use stigma conducted by Smith & Earnshaw (2018).<sup>65,66</sup> The systematic review on the intersection of gender and substance use stigma within Chapter 2 draws on a subset of the data collected within this larger parent systematic review, and the analyses were further guided by an adapted version of the Stigma and Substance Use Process Model in which the focus is narrowed to the phenomena of interest (i.e., gender and substance use stigma; See Figure 1.1).



**Figure 1.1:** Adaptation of the Stigma and Substance Use Process Model<sup>65,66</sup> for Evaluating the Intersection of Gender and Substance Use-Related Stigma.

## **Rhodes' Risk Environment Framework**

The risk environment framework, developed by Tim Rhodes,<sup>67</sup> conceptualizes drug use and related harms as a product of the intersection between an individual's behavior and a set of overlapping environments that constrain their capacity to avoid those drug-related harms.<sup>67</sup> More specifically, this framework identifies spatial, social, economic, and policy environments that intersect to either ameliorate or exacerbate an individual's drug-related decision-making and, consequently, related harms.<sup>67</sup> The spatial risk environment consists of the drug distribution routes, migration, and physical locations in which drug use-related risks are produced (e.g., shooting galleries).<sup>67</sup> The social risk environment refers to the interpersonal relationships, social contexts, and social norms (e.g., gendered inequalities and power dynamics) that produce drug use-related risks (e.g., intimate partnerships).<sup>67</sup> The economic risk environment consists of the access to (or lack thereof) income, societal healthcare spending, and financial costs that produce drug use-related risk (e.g., the inability to afford housing or involvement in the underground economy).<sup>67</sup> Lastly, the policy risk environment consists of the laws and policies that govern the legality, availability, and acceptability of drug use, possession, and harm reduction services that produce drug use-related risk (e.g., the availability of syringe exchange services).<sup>67</sup> Additionally, this framework acknowledges the potential for the interaction of the aforementioned environments at the micro (e.g., informal injection locations), meso (e.g., substance use disorder services), and macro (e.g., drug policy) levels.<sup>67</sup> Previously, the risk environment framework has been applied to explain HIV and other injection-related risks among PWID,<sup>68-71</sup> and thus is well suited to investigate injection initiation risk among PWID. To accomplish the aims of Chapter 3 and Chapter 4, this framework guided the development of PRIMER and the accompanying interview guides that assessed the contexts and processes surrounding injection initiation events.

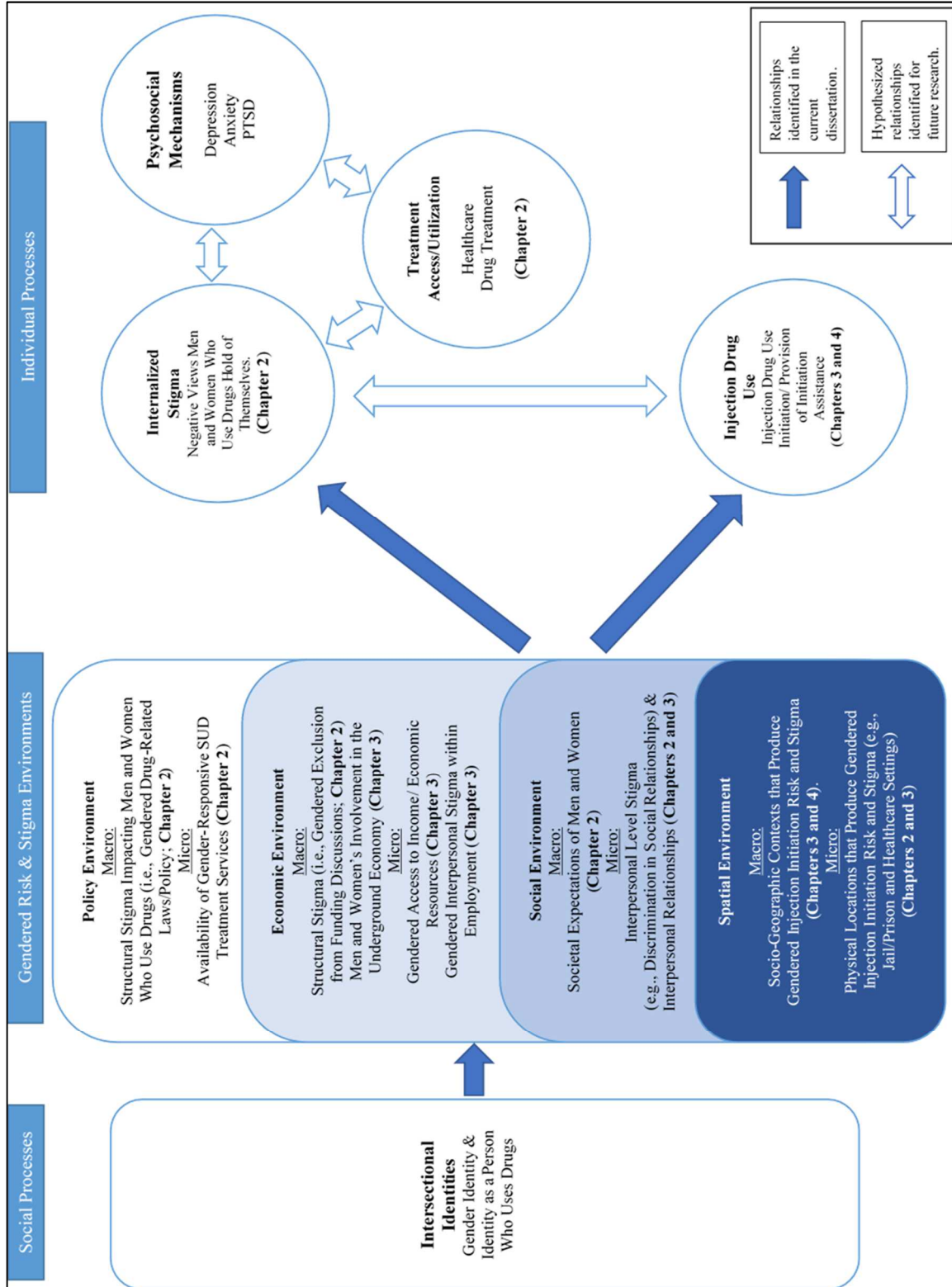
Furthermore, this framework informed the analysis and interpretation of the gender composition of injection initiation events within differing drug use contexts across San Diego, USA, Vancouver, Canada, and Tijuana, Mexico (See Table 1.1), as well as the evaluation of the association between gender and the provision of injection initiation assistance for the first time across Tijuana, Mexico and Vancouver, Canada.

**Table 1.1:** Adaptation of the Risk Environment Framework (REF) for Evaluating Gender in Injection Initiation Events.

	<b>Micro-Environment</b>	<b>Macro-Environment</b>
<b>Spatial</b>		
<i>Risk</i>	The physical locations that produce the gender composition of injection initiation events across San Diego, Vancouver, and Tijuana (i.e., Jails/Prisons, etc.). (Chapter 3)	The broad geographic regions (i.e., San Diego, Vancouver, and Tijuana) that impact the role of gender in injection initiation events. (Chapters 3 & 4)
<b>Social</b>		
<i>Risk</i>	The social contexts and interpersonal relationships that produce the gender composition of injection initiation events across San Diego, Vancouver, and Tijuana. (Chapter 3)	The gendered inequalities, power dynamics, social norms, and stigmatization that impact the gender composition of injection initiation events across contexts. (Chapter 3)
<b>Economic</b>		
<i>Risk</i>	The lack of access to income or resources and the financial costs that contribute to the gender composition of injection initiation events across San Diego, Vancouver, and Tijuana. (Chapter 3 & 4)	The growth of underground economies and the lack of health service spending that produces the gender composition of injection initiation events across San Diego, Vancouver, and Tijuana. (Chapters 3 & 4)
<b>Policy</b>		
<i>Risk</i>	The availability and acceptability of substance use disorder treatment (e.g., medication assisted treatment) that produce the gender composition of injection initiation events across San Diego, Vancouver, and Tijuana. (Chapter 3)	The laws that govern drug use and possession and the legality of harm reduction programs that impacts the gender composition of injection initiation events across San Diego, Vancouver, and Tijuana. (Chapter 3)

### **Theoretical Framework Integration: The Gender-Responsive Stigma and Substance Use Process Model**

Informed by conceptual complementarity between Rhodes' Risk Environment Framework,<sup>67</sup> the Stigma and Substance Use Process Model,<sup>65,66</sup> and a review of the relevant literature, this dissertation employs a novel Gender-Responsive Stigma and Substance Use Process Model, which adapts and integrates the aforementioned framework and process model (See Figure 1.2). This Gender-Responsive Stigma and Substance Use Process Model seeks to explain how the intersection of stigmatized social identities manifest within gendered risk environments to produce substance use-related harms and outcomes (i.e., substance use stigma and injection initiation processes) at the individual-level. In this model, an individual's intersectional identities related to gender and substance use uniquely shape how they experience micro- and macro-level risk and stigma-related consequences across multiple environments (e.g., policy, economic, social, and spatial).



**Figure 1.2:** A Visualization of the Gender-Responsive Stigma and Substance Use Process Model.

The integrated macro policy risk environment captures structural-level stigma, exhibited through development of laws and policies, that differentially impacts MWUD and WWUD, and produces gendered injection drug use risk and stigma (i.e., the criminalization of substance use during pregnancy; Chapter 2). The integrated micro policy risk environment, however, refers to the availability, or lack thereof, of gender-responsive drug treatment services (Chapter 2). The integrated macro economic risk environment includes the structural-level stigma, exhibited through gendered exclusion from funding and policy discussions, that results in the imbalance of allocated funds for men- and women-specific substance use-related services (Chapter 2). The integrated micro economic risk environment refers to the gendered access to resources (i.e., gender differences in resource instability and underground economy involvement [e.g. selling drugs and sex trading]; Chapter 3) and the gendered interpersonal stigma within employment (i.e., employer's stereotypes that WWUD also engage in sex trading; Chapter 3) that PWUD experience.

The integrated macro social risk environment includes the societal-level gendered power social norms (i.e., expectations of manhood and womanhood) that produce injection drug use risk and stigma (i.e., expectations of morality and motherhood for WWUD; Chapter 2). The integrated micro social risk environment refers to gendered interpersonal-level substance use-related stigma in social relationships, substance use-related intimate partnerships, and the gender-based violence experienced by WWUD (Chapters 2 and 3). The integrated macro spatial risk environment includes the geographic and sociocultural contexts that produce gendered injection drug use risk and stigma (e.g., the increased risk of providing injection initiation assistance for the first time among MWUD in Tijuana; Chapters 3 and 4). Lastly, the integrated micro spatial risk environment refers to the physical locations that produce gendered injection

drug use risk and interpersonal stigma (i.e., the context of jails/prisons that produce gender concordant injection initiation events in Tijuana and the discrimination against WWUD in healthcare settings; Chapters 2 and 3).

Additionally, based on the findings from this dissertation, an individual's experiences within these integrated micro- and macro risk environments impact an individual-level process in which an individual personally devalues themselves based on their gender and/or substance use-related identity (i.e., internalized stigma; Chapter 2). Further, an individual's experiences with these integrated risk environments serves to impact their injection drug use processes (e.g., their provision of injection initiation assistance) (Chapters 3 and 4).

Based on a review of the relevant literature, the Stigma and Substance Use Process model,<sup>65,66</sup> and the areas for future research identified by this dissertation, it is further hypothesized that the degree of internalized stigma, resulting from experiences with the integrated risk environment, will be associated with an individual's psychosocial functioning (e.g., depression, anxiety, and PTSD). This hypothesis is supported by existing literature that demonstrates a positive association between internalized substance use-related stigma and increased levels of depression symptoms among PWUD.<sup>72-74</sup> Further, it is hypothesized that an individual's psychosocial functioning will be associated with their engagement with the health care and substance use disorder treatment, which will subsequently reinforce internalized stigma for PWUD. More specifically, this model depicts that, if an individual has greater internalized stigma, this could serve to increase depressive symptomology, thereby negatively impacting their willingness to engage with healthcare services and potentially further exacerbating internalized stigma. This hypothesized process is supported by reports that PWUD with major depressive disorder are more likely to report encountering barriers to accessing and utilizing health care



services,<sup>75</sup> and that WWUD's experiences with discrimination in health care settings can compound self-judgement and shame (i.e., internalized stigma) surrounding their drug use.<sup>76</sup>

Lastly, it is hypothesized that injection drug use processes, resulting from experiences with the integrated risk environments, will be negatively associated with internalized stigma for PWID. Existing qualitative research supports this hypothesis, with narratives illustrating that the stigmatized nature of providing injection initiation assistance has led some WWID to refer to themselves as, "evil" or, "like Rosemary's baby" for having provided this assistance.<sup>48</sup> This demonstrates how injection initiation processes, produced through the integrated risk environments, can exacerbate self-devaluation for PWID.

### **Complementarity and Overlap**

Both the process model and framework that were adapted and integrated into the Gender-Responsive Stigma and Substance Use Process Model provide unique and complementary insights into substance use stigma and injection drug use processes (See Table 1.2). For example, the Stigma and Substance Use Process Model provides insight on the individual dimension of substance use stigma and injection drug use processes through the investigation of identity (i.e., gender and substance use), internalizing psychosocial mechanisms (i.e., depression, anxiety, and PTSD), and internalized stigma; these processes, which represent individual-level experiences, are not a central focus of the Risk Environment Framework, which instead primarily defines relationships between socio-structural factors and injection-related risk.<sup>68</sup> In addition, the Stigma and Substance Use Process Model provides much needed insight on the temporal and causal relationship between constructs within substance use stigma and injection drug use trajectories,<sup>65,66</sup> whereas the Risk Environment Framework does not explicitly provide a pathway to conceptualize how risk changes over time. One of the strengths of the Risk Environment

Framework, however, lies in the framework's delineation between micro- and macro-level manifestations of each risk environment, and the intersection of multiple risk environments across these two levels.<sup>68</sup> Further, this framework provides a clear pathway for the investigation of key socio-structural risk factors for stigma and injection drug use, including assessing the economic risk environment, that can be used to effectively delineate how individual choices are made by marginalized individuals within socio-structural constraints.<sup>68</sup> As such, the Stigma and Substance Use Process model provides information on both the individual mechanisms and the temporal relationship between constructs involved in stigma and injection drug use processes, whereas the Risk Environment provides complementary insights on how socio-structural constraints produce these processes at both micro- and macro- levels.

### **Conceptual Framework and Dissertation Aims**

This theory integration seeks to provide an intersectional, gender-specific approach to understanding substance use stigma and injection drug use processes. Furthermore, it seeks to provide the following elements: (1) an organizational structure for the results of the current dissertation, (2) a lens with which to identify existing gaps in the knowledgebase and highlight topics for future research, and (3) a blueprint for the development of intersectional, gender-responsive harm reduction, intervention, and prevention services for PWUD. More specifically, Chapter 2 identifies how the intersection of stigmatized social identities (i.e., gender and substance use) manifest within gendered policy, economic, and social risk environments to produce internalized stigma. Chapters 3 and 4 identify how gendered economic, social, and spatial risk environments produce injection drug use-related processes. All three of these chapters will highlight components of this process model that need further investigation and will serve to lay the foundation for the future development of tailored, theoretically derived, gender-

responsive interventions targeting intersectional gender- and substance use-related stigma and substance use-related harms.

**Table 1.2:** Identification of the Conceptual Overlap in the Application of the Stigma and Substance Use Process Model and Risk Environment Framework in Evaluating the Influence of Gender on Substance Use Trajectories.

<i>Key Concepts</i>			
	<b>Gender-Specific Risk Environments</b>	<b>Gender-Specific Stigma and Substance Use Processes</b>	<b>Substance Use Outcomes</b>
<i>Risk Environments</i>			
<b>Individual</b>	<p><u>Micro:</u> N/A</p> <p><u>Macro:</u> N/A</p>	<ul style="list-style-type: none"> <li>• <b>Social Stigma:</b> Women who use drugs experience greater stigma related to the intersection of their identities as a woman and as a person who uses drugs.</li> <li>• <b>Internalizing Psychosocial Mechanisms:</b> Women who use drugs are disproportionately impacted by mood and anxiety disorders.</li> </ul>	<p><u>Substance use-related risks:</u></p> <ul style="list-style-type: none"> <li>• There were greater proportions of men providing injection initiation assistance and gender concordant initiation events in Tijuana when compared to Vancouver or San Diego.</li> <li>• Additionally, male gender was associated with an increased risk of providing first-time injection initiation assistance in Tijuana, but not in Vancouver.</li> <li>• Greater proportions of gender discordant injection initiation events were found in Vancouver and San Diego.</li> <li>• Specific physical environments (i.e., jails/prisons) could contribute to the greater gender concordance found in Tijuana.</li> <li>• Intimate partnerships, and the intertwining of these partnerships with economic environments, could contribute to the gender discordance found in San Diego.</li> <li>• Caring for others in substance using social networks in the context of an opioid overdose epidemic could contribute to the gender discordance found in San Diego.</li> </ul>
<b>Spatial</b>	<p><u>Micro:</u> The physical locations that produce gendered substance use risks (i.e., Jails/Prisons as a site of gender concordant injection initiation events in Tijuana)</p> <p><u>Macro:</u> The geographic/sociocultural contexts that create gendered substance use risks (i.e., male gender being associated with increased risk of providing first-time injection initiation assistance in Tijuana, Mexico)</p>	<p><u>Micro:</u></p> <ul style="list-style-type: none"> <li>• <b>Individual/Interpersonal Stigma:</b> Health care settings can produce discrimination and substance-use related stigma for women who use drugs.</li> </ul> <p><u>Macro:</u></p> <ul style="list-style-type: none"> <li>• <b>Structural Stigma:</b> Punitive policies for pregnant women and mothers (i.e., mandated drug testing/reporting and CPS involvement) can produce greater stigma for women who use drugs in health care settings.</li> </ul>	
<b>Social</b>	<p><u>Micro:</u> The social contexts and interpersonal relationships that produce gendered substance use risks (i.e., intimate partnerships for women who use drugs)</p> <p><u>Macro:</u> The gendered power dynamics and social norms that impact substance use-related risk (i.e. injection-related social norms for WWUD in Tijuana)</p>	<p><u>Micro:</u></p> <ul style="list-style-type: none"> <li>• <b>Individual/Interpersonal Stigma:</b> Women who use drugs experience greater levels of internalized stigma and gender-based violence due to their intersecting identities as a woman who use drugs.</li> </ul> <p><u>Macro:</u></p> <ul style="list-style-type: none"> <li>• <b>Structural Stigma:</b> Women who use drugs experience greater stigma due to societal expectations of womanhood (i.e., morality/ promiscuity, cleanliness, &amp; motherhood)</li> </ul>	

**Table 1.2:** Identification of the Conceptual Overlap in the Application of the Stigma and Substance Use Process Model and Risk Environment Framework in Evaluating the Influence of Gender on Substance Use Trajectories (Continued).

<i>Key Concepts</i>			
	<b>Gender-Specific Risk Environments</b>	<b>Gender-Specific Stigma and Substance Use Processes</b>	<b>Substance Use Outcomes</b>
<i>Risk Environments</i>			
<b>Economic</b>	<p><u>Micro:</u> Women’s restricted of access to income or resources that contribute to substance use-related risk (i.e., injection initiation)</p> <p><u>Macro:</u> Men and women’s involvement in underground economies and the lack of health service spending that produce gendered substance use risk.</p>	<p><u>Micro:</u></p> <ul style="list-style-type: none"> <li>• <b>Individual/Interpersonal Stigma:</b> Women who use drugs face stereotypes from employers and experience gender-based violence within underground economies.</li> </ul> <p><u>Macro:</u></p> <ul style="list-style-type: none"> <li>• <b>Structural Stigma:</b> Women’s exclusion from policy- and funding-related discussions, such that women-specific services are seen as “extravagant”</li> </ul>	<p><u>Healthcare:</u></p> <ul style="list-style-type: none"> <li>• Both the ubiquitous nature of substance use-related stigma for women who use drugs in healthcare settings, and the punitive health-related policies for WWUD, contributed to negative health care experiences and the avoidance of accessing health care.</li> <li>• This includes avoiding/delaying prenatal services due to fear of CPS involvement and experiencing discrimination or abuse within gynecological, emergency room, and drug treatment services.</li> <li>• Furthermore, key stakeholders report that funding for women-specific services is often viewed as “extravagant.”</li> </ul> <p><u>Health/Well-Being:</u></p> <ul style="list-style-type: none"> <li>• Experiences of discrimination and gender-based violence can contribute to trauma and decreased health/well-being, as well as increased substance misuse/risk behavior for women who use drugs.</li> </ul>
<b>Policy</b>	<p><u>Micro:</u> The availability and acceptability of gender-specific harm reduction efforts like syringe exchange programs that could ameliorate the harms of substance use-related risk.</p> <p><u>Macro:</u> The laws that govern drug use and possession and the legality of harm reduction programs that impact men and women who use drugs.</p>	<p><u>Micro:</u></p> <ul style="list-style-type: none"> <li>• <b>Individual/Interpersonal Stigma:</b> The drug using practices that contribute to gender-based violence for women who use drugs.</li> </ul> <p><u>Macro:</u></p> <ul style="list-style-type: none"> <li>• <b>Structural Stigma:</b> The laws/policies that are discriminatory towards women who use drugs and contribute to gender-based violence for this population (i.e., involuntary drug treatment and mandatory drug testing for pregnant women)</li> </ul>	

## AIMS AND HYPOTHESES

Informed by a review of relevant literature on substance use-related stigma and the impact of gender on injection drug use processes, as well as the Gender-Responsive Stigma and Substance Use Process Model, the present dissertation has the following three aims. Of note, the present dissertation will be focusing specifically on drug use-related processes (i.e., processes involving the use of street-based drugs) rather than more broadly focusing on substance use-related processes (i.e., processes involving all misused substances, including alcohol).

Aim 1: To systematically review the global scientific literature on the intersection of gender and substance use stigma, and how it impacts drug use trajectories (i.e., frequency of use, types of drugs used, drug misuse, and related drug risk behaviors [e.g., injection drug use]).

Hypothesis 1.1: The reviewed literature will demonstrate WWUD experience greater levels of stigma and will consequently have poorer substance use-related outcomes (i.e., higher frequency of drug use, higher rates of drug misuse, and greater rates of drug risk behaviors). Hypothesis 1.2: The reviewed literature will demonstrate that women who do not use drugs will have more negative (i.e., stigmatizing) views of drug misuse compared to men who do not use drugs.

Aim 2: Using a mixed methods design, to examine how gender influences the risk environment for an individual's provision of injection initiation assistance across three distinct North American contexts (San Diego, USA, Vancouver, Canada, and Tijuana, Mexico). This aim builds upon insights gained in Aim 1 by further elucidating the intersection of gender and stigma on a pivotal moment in substance use trajectories: injection drug use initiation. This involved investigating the gendered contexts of PWID's assistance of others in injection initiation events across distinct socio-cultural contexts. Hypothesis 2.1: The proportion of female assisters, female assistees, and gender-discordant injection initiation events will be lower in Tijuana, Mexico

compared to San Diego, USA and Vancouver, Canada. *Hypothesis 2.2:* The risk environments in which women's and men's injection initiation processes occur will be qualitatively different across Tijuana, Mexico, San Diego, USA, and Vancouver, Canada. Specifically, it is hypothesized that the social risk environment of intimate partnerships will be important for the injection initiation processes of WWID, especially in San Diego, USA, and Vancouver, Canada, whereas the economic risk environment and social risk environment of friendships will be important for injection initiation processes among MWID in Tijuana, Mexico.

Aim 3: To quantitatively assess the association between gender differences and the provision of injection initiation assistance for the first time among prospective cohorts of PWID in two North American contexts: Tijuana, Mexico and Vancouver, Canada. This aim further extends the information gained from the previous two aims by longitudinally assessing the impact of gender on PWID's injection initiation assistance provision across two distinct macro spatial risk environments. *Hypothesis 3.1:* Among a sample of PWID, women will be less likely to report providing first-time injection initiation assistance compared to men across the study period. *Hypothesis 3.2:* The difference in the risk of providing injection initiation assistance for the first time between MWID and WWID among a sample of PWID will be greater in the macro spatial risk environment of Tijuana compared to Vancouver.

## **IMPORTANCE**

This dissertation seeks to add to the scientific evidence on injection-related harms, substance use-related stigma, and gendered substance use pathways by investigating the impact of gender on substance use stigma and injection initiation processes across distinct geographic and risk environment contexts. Specifically, the present studies sought to fill existing gaps in the literature by providing a systematic review of the intersection of gender and substance use

stigma, information on the gendered risk environments that produce injection drug use initiation assistance provision across contexts, and gender differences in the provision of injection initiation assistance for the first time across macro spatial risk environments. The need for effective, tailored, gender-specific services is evident given the current opioid overdose crisis and heightened vulnerability of WWUD.<sup>1-4,6</sup> Despite this need, however, there is a significant lack of prevention, treatment, and harm reduction efforts that tailor their services specifically towards WWID and those at risk of initiating injection.<sup>8,77,78</sup> The knowledge gained from the current dissertation allows for the development of tailored intervention and harm reduction efforts that could have valuable implications for reaching underserved populations of people who use drugs (i.e., WWUD and WWID), as well as for reductions in disease transmission, overdose death, and other injection-related harms. Furthermore, both the present study findings and the Gender-Responsive Stigma and Substance Use Process Model (see Figure 1.2) could serve as a blueprint for the development of gender-specific and theoretically derived interventions targeting intersectional gender- and substance use-related stigma and other psychosocial, drug use- and treatment-related outcomes. Lastly, this dissertation provides additional insight on the contextual influences on the relationship between gender and drug use trajectories, contributing more nuanced information on the needs of MWUD and WWUD across geographical and sociocultural regions (i.e., San Diego, Tijuana, and Vancouver). This information could then also be utilized to develop both gender- and site-specific harm reduction and treatment efforts.



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## **CHAPTER 2: THE INTERSECTION OF GENDER AND SUBSTANCE USE-RELATED STIGMA: A MIXED METHODS SYSTEMATIC REVIEW AND SYNTHESIS OF THE LITERATURE**

### **ABSTRACT**

**Background:** Substance use-related stigma is a significant barrier to care among people who use drugs (PWUD). Less is known regarding how intersectional identities, like gender, shape experiences of substance use-related stigma. Yet, women who use drugs (WWUD) are at increased risk of drug-related harms, including HIV transmission. We sought to answer the following questions: (1) Do non-substance using men or women stigmatize PWUD more? and (2) Do men or women PWUD experience more substance use stigma?

**Methods:** Data were drawn from a systematic review of the global, peer-reviewed scientific literature on substance use-related stigma conducted through 2017 and guided by the Stigma and Substance Use Process Model and PRISMA guidelines. Articles were included in the present analysis if they either qualitatively illustrated themes related to the gendered nature of substance use-related stigma, or quantitatively tested the moderating effect of gender on substance use-related stigma.

**Results:** Of the 75 studies included, 40(53%) were quantitative and 35(47%) were qualitative. Of the quantitative articles, 22(55%) found no association between gender and substance use-related stigma, 7(18%) reported that women held more stigmatizing views of PWUD, 8(20%) demonstrated that men held more stigmatizing views, 4(10%) identified that WWUD were more stigmatized, and 2(5%) determined that men who use drugs (MWUD) were more stigmatized. In contrast, nearly all (34; 97%) of the qualitative articles demonstrated that WWUD experienced greater levels of substance use-related stigma.

**Conclusion:** The quantitative literature is equivocal regarding the influence of gender on substance use-related stigma, but the qualitative literature more clearly demonstrates WWUD experience greater levels of stigma. This review identifies potential areas for methodological improvement and future research. The use of validated substance use-related stigma measures and the development of intersectional stigma scales are needed to understand the role of stigma in heightening the disproportionate harms experienced by WWUD.



## **BACKGROUND**

The stigmatization and criminalization of psychoactive drug use is common across most modern societies.<sup>1,2</sup> This is of concern because persons who use drugs (PWUD) who experience substance use-related stigma have been found to have poorer psychological well-being<sup>1</sup> and to report this stigma as a significant barrier to accessing health care, drug screening, and drug treatment services.<sup>2</sup> Impeding health care utilization further, drug use research from the perspectives of individuals who do not use drug has indicated that health care professionals may hold negative views toward PWUD, and have been observed ascribing the stereotypes of poor motivation, violence, and manipulation to their patients with substance use disorders (SUDs),<sup>3</sup> despite SUDs being clinically diagnosed and treatable psychiatric conditions.

Limited research indicates that women who use drugs (WWUD) encounter compounded stigma, including within existing drug using networks and drug policy environments, due to gendered social norms and societal expectations that women be primary caregivers.<sup>4,5</sup> WWUD also report feeling greater internalized stigma<sup>2</sup> and embarrassment when accessing treatment for SUDs when compared to men who use drugs (MWUD).<sup>6</sup> Past research has also indicated, however, that there may be significant gender differences in the perspectives of individuals who do not use drugs towards drug use.<sup>7</sup> For example, women who do not use drugs may hold more negative views, and be less tolerant of, drug misuse when compared to men.<sup>8</sup>

Exacerbating the harms of drug use-related stigma further, WWUD are at greater risk of injection-related harms like HIV and hepatitis C (HCV), and have also been found to be more likely than MWUD to encounter barriers that prevent them from seeking or completing drug treatment.<sup>6,9</sup> For example, WWUD are disproportionately affected by mood and anxiety disorders,<sup>9</sup> and are more likely to report having difficulty regularly attending SUD treatment

sessions due to family responsibilities, which may serve to deter women from accessing and utilizing SUD treatment services.<sup>6,9</sup> Additionally, given the illicit nature of most misused drugs, WWUD are at risk for involvement with law enforcement agencies, notification of child protective services (CPS), and/or their children being removed from their care upon disclosing their drug use.<sup>9,10</sup> Furthermore, WWUD, including women who inject drugs (WWID), experience high rates of both intimate partner violence and violence from strangers and acquaintances.<sup>4</sup> This violence, or the threat of violence, has also been linked to behaviors that place WWUD at further risk for HIV and HCV, including syringe sharing and avoiding harm reduction services.<sup>4</sup> Given the documented vulnerability of women to drug use-related harms, additional gender-responsive research is critical for better understanding the experiences of WWUD with substance use-related stigma and for the development of tailored harm reduction efforts.

Greater research is needed, however, to fully understand the intersectional nature of gender- and substance use-related stigma and its impacts on drug use-related outcomes and harms. This is because, while a small body of research has to date highlighted the multiplicative effect of gender and substance use-related stigmas, little is known regarding their combined impact on a range of health and social outcomes. To that end, intersectionality researchers have argued that examining stigmatized identities (e.g., drug use or gender) in isolation or in an additive manner can serve to obfuscate interdependent experiences of stigma and their impacts on health disparities.<sup>11</sup>

As such, the aim of the current study is to systematically review the scientific literature on the intersection of gender- and substance use-related stigma, and how this intersection impacts drug use trajectories (i.e., frequency of use, types of drugs used, drug misuse, and related

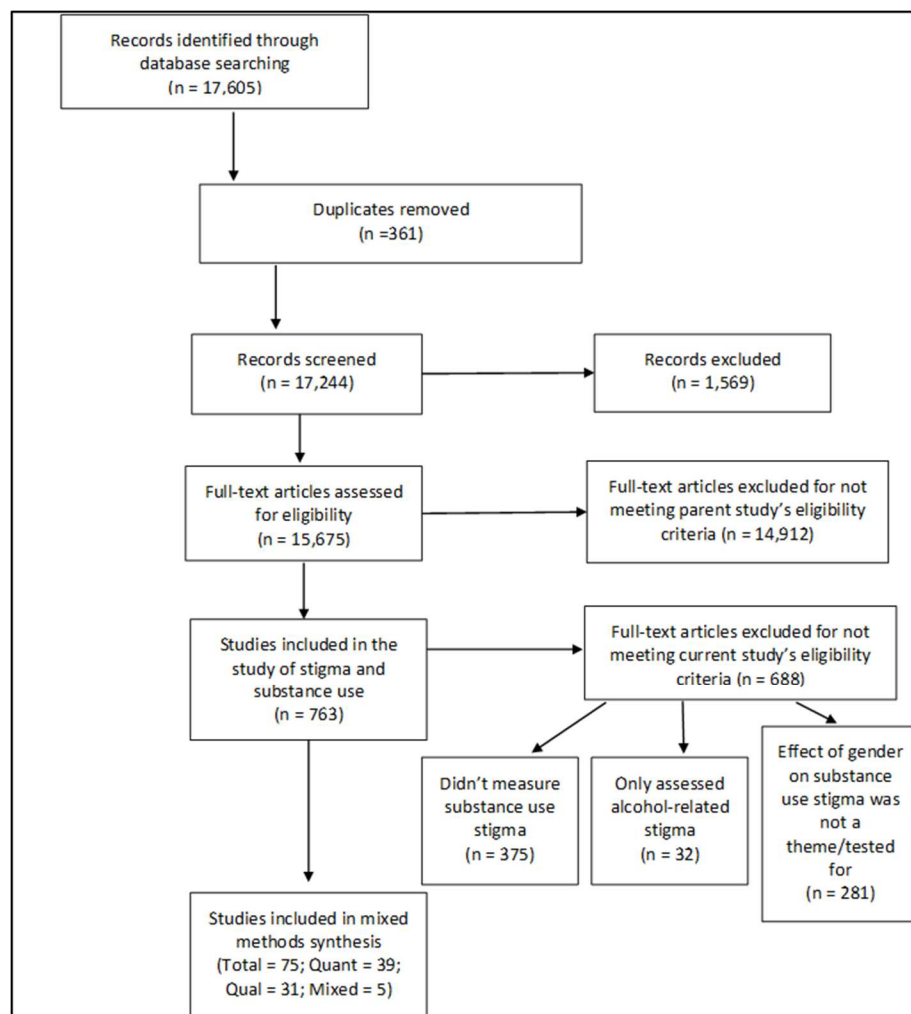
drug risk behaviors [e.g., injection drug use]). The primary hypothesis is that the peer-reviewed literature produced to date would demonstrate that the intersectional identities of being a woman and a PWUD would combine in ways that produce greater levels of substance use-related stigma and would, consequently, result in poorer drug use-related outcomes (i.e., higher frequency of drug use, higher rates of drug misuse, and higher rates drug risk behaviors). It was also hypothesized that the peer-reviewed literature would demonstrate that women who do not use drugs have more negative views of drug use compared to men who do not use drugs.

## **METHODS**

### **Search Strategy**

The parent study led by Smith and Earnshaw (2018) sought to conduct a systematic review of the literature on substance use stigma, guided by the Stigma and Substance Use Process Model (as described previously in Chapter 1),<sup>12,13</sup> and in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.<sup>14</sup> The parent study was intended to systematically review the literature on substance use-related stigma and, subsequently, how that stigmatized identity impacts outcomes on the drug use treatment cascade (i.e. drug treatment initiation). The current study, however, was intended to investigate the impact of intersectional identities (i.e., gender- and drug use-related identities) on experiences of substance use-related stigma, and, subsequently, how the combination of those stigmatized identities impacts drug use-related outcomes (i.e., frequency of use, drug misuse, and drug risk behavior). In order to accomplish this, search terms were developed and piloted to capture published articles that examined stigma and one or more term(s) related to substance use including alcohol or drug use (e.g., addiction, alcoholism, alcohol use, substance use, drug use). Additionally, even though policy changes have resulted in the stigmatization of tobacco use, this

shift in social norms has been a relatively recent change.<sup>15</sup> As such, it was hypothesized that tobacco stigma would be qualitatively different than the stigma related to other misused substances, and search terms related to tobacco use were not included. The initial search was run in PubMed April 8th, 2016, obtaining 2,435 unique titles. On May 24th, 2017 the search was rerun, censoring the publication date at December 31st, 2016, obtaining an additional 323 unique titles. To ensure we obtained all manuscripts that examined stigma and/or discrimination, the search was then amended to replace the term ‘stigma’ with ‘discrimination’ and rerun on May 24th, 2017, obtaining 14,486 unique titles after removing 361 titles that were duplicated from the previous searches. See Figure 2.1 for a flow diagram of the systematic review process for this study. This search yielded a total of 2,758 unique titles from the stigma and substance use searches, and a total of 14,486 unique titles from the discrimination and substance use search, yielding a combined total of 17,244 unique articles whose titles and abstracts were then screened for inclusion. All articles were reviewed by two independent trained coders at each stage of the review and coding process (BD and SAM). Coding decisions were reviewed at weekly team meetings held by the senior author (LRS) and any discrepancies in codes were resolved by group consensus.



**Figure 2.1:** A flow chart of the systematic review process for the current study investigating the intersection of gender- and substance use-related stigma according to PRISMA guidelines.

## Full-Text Review

Initially titles and abstracts of the 17,244 articles were reviewed by trained coders to identify articles that may potentially assess stigma and/or discrimination and any substance use related experience (e.g., substance use/misuse/dependence, SUD diagnosis/disclosure/treatment) that would warrant a full-text review for the parent systematic review. From this screening process, 1,569 articles were excluded due to the absence of a discussion of both stigma/discrimination and substance use-related outcomes within their titles and abstracts. The

full text of the remaining 15,675 articles were subsequently assessed for inclusion. Articles were excluded from the parent study if: (1) the article was not an original, peer-reviewed, research article, (2) if the authors of an article did not contain either a quantitative measure of stigma or identify stigma as a qualitative theme in their study, (3) if the authors mentioned a stigmatized characteristic other than substance use stigma and did not also measure substance use-related outcomes, and (4) if the article was not in English. No exclusion criteria regarding the year of publication, the populations sampled, study methods employed, or the geographic region studied were applied. Following the full text review, 14,912 articles were excluded for not meeting inclusion criteria and 763 articles meeting the parent study's criteria were retained for coding.

For the purpose of the current study, the following inclusion criteria were further employed by trained coders SAM and BD to the remaining 763 articles: (1) the article assessed stigma related to street-based drug use (i.e., it measured substance use-related stigma for drugs other than alcohol or tobacco), (2) the article assessed substance use-related stigma separately from other stigmatized characteristics (e.g., mental health diagnoses) allowing for the true effect of gender on substance use-related stigma to be determined, and either (3) the articles in which themes emerged related to the gendered nature of substance use-related stigma in the qualitative analysis, or (4) the article quantitatively tested the moderating effect of gender on substance use-related stigma.

### **Coding Process**

A standardized codebook was developed iteratively by the principal investigators of the parent study to capture information related to the Stigma and Substance Use Process Model within the collected literature.<sup>12,13</sup> Trained coders then coded the articles that fulfilled inclusion criteria by initially indicating whether the study represented one of the following three processes:

(A) an investigation of the impact of social stigma(s), other than substance use stigma, on substance use-related outcomes, (B) an investigation of the impact of substance use stigma, among substance using populations, on substance use-related outcomes, or (C) an investigation of the impact of the intersection of other stigmas with substance use stigma on substance use-related outcomes. Additionally, the coding team coded the articles to indicate whether structural, interpersonal (i.e., actor), or individual (i.e., target) manifestations of stigma were assessed and drug use outcomes were coded either as risk behaviors (i.e., frequency of use, drug type, drug misuse, or other risk behaviors) or as part of the drug use treatment cascade (e.g., drug use treatment induction and adherence). The trained research team members also coded the following aspects of the studies' methods: study duration (cross-sectional or longitudinal), data type (quantitative, qualitative, or mixed methods), whether the study focused on an intervention and whether that intervention was evaluated, the study location, sample size, and sample characteristics (i.e., gender [male, female, or transgender], age, and race/ethnicity). For the current review, the specific stigma scale employed in the quantitative studies was also recorded.

### **Analysis of Data**

Similar to methodology used by Kulesza et al. (2013),<sup>1</sup> Werb et al. (2013),<sup>16</sup> and outlined by experts in the field<sup>17,18</sup> this review evaluated the collected studies according to the following criteria: (1) study characteristics: sample size, study location, study method, and year published, (2) participant characteristics: gender, age, and race/ethnicity, (3) stigma-related variables: how stigma was defined and stigma type (i.e., substance use stigma and/or gender-related stigma), and (4) substance use-related variables (i.e., frequency of use, substance type used, substance misuse, and substance related risk behavior.). In this analysis, the primary outcomes of interest

were the stigma-related variables and the secondary outcomes were the substance use variables. Data were extracted from the collected articles and organized in tables for analysis.

Additionally, similar to methods developed by Thomas and Harden (2008),<sup>19</sup> and used by Guise et al. (2017),<sup>20</sup> a thematic synthesis, guided by the adapted Stigma and Substance Use Process Model,<sup>12,13</sup> was conducted to analyze the qualitative data within the included articles. Thematic synthesis is a method in which descriptive and analytical themes are developed through the coding of the original studies.<sup>19,20</sup> Importantly, the focus of the coding and analysis in this method is the constructs identified by study authors (i.e., second order constructs).<sup>19</sup> This focus on the second order constructs is adopted so as to avoid introducing bias in the reinterpretation of primary data given our limited understanding of the context in which the original data were collected, and the potential for misinterpreting isolated fragments of data.<sup>19,20</sup> In this technique, the descriptive themes translate the findings from the original studies into one another in an effort to identify common and overlapping areas of focus.<sup>19,20</sup> Additionally, analytical themes seek to provide a novel synthesis of the literature to explore and explain the descriptive themes.<sup>19,20</sup> The aim of this analysis, then, was to identify themes that describe and explain the intersection of gender and substance use stigma, and how that intersection impacts substance use-related outcomes. Initially, after reviewing the included qualitative articles, a coding framework to guide the coding process was iteratively developed and refined by two authors (SM, LRS). The coding framework and coding process allowed for the “reciprocal translation” of the findings,<sup>19,20</sup> in which the findings and concepts from different studies were able to be combined. Additionally, the study team worked together to discuss the coding and analysis process, the translation of concepts from different studies, the comparison of codes



within code categories, and the grouping of codes into categories. Code categories were reviewed, discussed, and revised until consensus was reached among the study team.

Lastly, the quality of the study methods for all articles that met inclusion criteria were evaluated. In accordance with past systematic reviews, evaluations of study quality were included as an aid for interpretation of the analysis rather than as part of the inclusion criteria.<sup>20,21</sup> For the quantitative articles, study quality was evaluated with the Downs and Black checklist, a measure composed of 27 items that assess five domains of study quality: reporting, external validity, risk of bias, confounding, and statistical power.<sup>22</sup> In-line with past research, 18 items across these five domains were retained from this measure to assess the study quality of quantitative studies that were observational in nature, and not an intervention-based study.<sup>16</sup> Scores on this checklist can range either from 0 to 27 for intervention-based studies or 0 to 18 for observational studies, with scores of 27 or 18 representing the highest level of study quality. For the qualitative articles, study quality was assessed with the Critical Appraisal Skills Programme (CASP; 2018) checklist, a measure composed of 10 items that assess the following three domains of study quality: study validity, results, and local impact.<sup>23</sup> Scores on this checklist can range from 0 to 10, with 10 representing a perfect score and the highest study quality. Members of the study team (SM, NC) independently rated the study quality of all included articles and any discrepancies were discussed (SM, NC, LRS) until a consensus was reached.

## **RESULTS**

### **Study Selection and Characteristics**

Of the 763 articles that fulfilled the parent study's inclusion criteria, 411 specifically measured or assessed substance use-related stigma and were evaluated for the current study. Of these 411 articles, 32 assessed only alcohol-related stigma and were, therefore, excluded.

Additionally, 23 articles assessed substance use-related stigma in conjunction with another stigmatized characteristic in such a way that the unique effect of gender on substance use-related stigma was unable to be determined. Furthermore, gender did not emerge as a theme within discussions of substance use-related stigma for 174 articles, and 107 articles did not test the moderating effect of gender on substance use-related stigma. As a result, 75 articles met all inclusion criteria for the current study and were retained for the present analysis (See Figure 2.1). Of these 75 articles, 39 (52%) were quantitative studies, 31 (41%) were qualitative, and 5 (7%) were mixed methods. For the purpose of the current study, mixed methods studies were considered quantitative if the portion of the analyses that pertained to the purpose of this review was quantitative in nature ( $n = 1$ ), and were considered qualitative if the analysis that corresponded to this review was qualitative in nature ( $n = 4$ ).

### **Methodological Quality Assessment**

The study quality of the 39 included quantitative articles and one mixed methods article were assessed using the Downs and Black checklist.<sup>22</sup> Three studies were intervention-based, and the remaining 37 studies were observational. The mean checklist score for the intervention-based studies was 13 and ranged from 10 to 18 (IQR: 10.5-12), whereas the mean for the observational studies was 11 and ranged from 7 to 15 (IQR: 10-13). Twenty-nine (74%) of the 39 included quantitative articles did not report pertinent information on study methods, characteristics, or results. Additionally, none of the included quantitative articles adequately addressed issues of external validity, risk of bias, confounding, or power. More specifically, 34 (87%) did not sufficiently address external validity, 17 (44%) did not adequately adjust for confounding, and one study (3%) did not have adequate power.

The study quality of the 31 included qualitative articles and four mixed methods articles were assessed using the CASP checklist.<sup>23</sup> The mean checklist score for these studies was 8.1 and ranged from 6 to 9 (IQR: 8-9). Thirty-three (94%) of the articles failed to adequately address issues of validity and five (14%) did not provide details on necessary ethical considerations. All 35 articles, however, adeptly discussed the value of the presented research.

### **Quantitative Synthesis**

Of the 40 articles that are included in this review of the quantitative literature, 27 (68%) assessed stigma from the perspective of non-substance using individuals (i.e., the interpersonal perspective), and 13 (32%) were from the perspective of PWUD (i.e., the individual perspective).

### **Quantitative Synthesis of Interpersonal Stigma**

For those assessing stigma from the interpersonal perspective, the majority of the articles (15; 55%) were from North America, with fewer from Europe (4; 15%), Australia (3; 11%), Asia (3; 11%), and Africa (1; 4%). One article (4%) did not specify the location in which their study was conducted. Nearly all of the included studies from the interpersonal perspective reported participant gender (26; 96%), though only 1 of these 26 (4%) moved past a binary measurement of gender to include persons who are transgender. In addition, most (25; 93%) reported the age composition of recruited participants, and 16 (59%) reported participants' race/ethnicity. See Table 2.1 for the full analysis of the quantitative articles assessing stigma from the interpersonal perspective.

Furthermore, nearly half (12; 45%) of these studies assessing stigma from the interpersonal perspective recruited their participants from the general public, a third (9; 33%) recruited healthcare workers (e.g., maternity healthcare workers, general practitioners, harm reduction service providers, medical students, and clinical psychologists), 5 (18%) recruited

university or high school students, and 1 (4%) recruited employers. Additionally, 12 (45%) of these articles found no significant relationship between gender and substance use-related stigma.<sup>3,24-34</sup> For example, van Boekel and colleagues (2015) sampled 723 key stakeholders (i.e., the general public, general practitioners, mental health specialists, etc.) in the Netherlands and found that participant gender did not significantly predict desired social distance (a measure of discrimination) from people with substance use disorders.<sup>28</sup>

The remaining 15 (55%) articles, however, did find a significant relationship between gender and substance use-related stigma. More specifically, 5 (33%) of these studies, including the study that moved past the binary assessment of gender, found that female participants held more stigmatizing views of PWUD,<sup>35-39</sup> 6 (40%) found that male participants held more stigmatizing views of PWUD,<sup>40-45</sup> and 2 (13%) reported mixed results in which men scored higher on one indicator of substance use-related stigma and women scored higher on another indicator.<sup>46,47</sup> Illustrating these results further, a study by Brown and colleagues (2015) recruited 250 college students from a Midwestern university in the United States and found that female participants had higher scores on measures of desired social distance (i.e., discrimination) and negative affect (i.e., prejudice) for marijuana users when compared to their male counterparts.<sup>36</sup> In contrast, a study by Meurk et al. (2014) found that, when 1,263 residents of Queensland, Australia were surveyed, men were significantly more likely to endorse coercion into to treatment for a vignette character with heroin dependence when compared to women.<sup>41</sup> Lastly, a study by Nabors et al. (2012) found, among 425 college students, that women were more likely to report a desire to help in response to a vignette character with marijuana dependence, but men were more likely to score higher on ratings of liking and expectations for academic progress for this vignette character.<sup>47</sup>

Two additional studies (13%) from the interpersonal perspective reported that participants had more negative views of WWUD,<sup>48,49</sup> and 1 study (7%) found that participants held more negative views of MWUD.<sup>48</sup> For example, Sorsdahl and colleagues (2012) found, among 868 members of the South African general public, that participants were more likely to endorse coercion into treatment for MWUD, but were more likely to report avoiding women who use cannabis.<sup>48</sup>

### **Quantitative Synthesis of Individual Stigma**

Among the 13 quantitative studies assessing stigma from the individual perspective, most (8; 62%) were from North America, 2 (15%) were from Australia, 2 (15%) were from Asia, and 1 (8%) was from Europe. All studies reported the gender of recruited participants, though only 3 (23%) moved past a binary measurement of gender to include persons who are transgender, and only 2 of these three included transgender participants in their analyses. Additionally, all studies reported participants' age and 9 (69%) reported participants' race/ethnicity. Furthermore, the majority of these studies (8; 62%) recruited PWUD or PWID, 3 (23%) recruited individuals accessing drug treatment, and 2 (15%) recruited individuals accessing harm reduction services (e.g., needle and syringe programs). See Table 2.2 for the full analysis of the quantitative articles assessing stigma from the individual perspective.

Three-quarters (10; 77%) of these articles assessing stigma from the individual perspective, including the 2 studies that moved past the binary measurement of gender, found no significant relationship between gender and substance use-related stigma.<sup>50-58</sup> Further illustrating this, a study from Cama et al. (2016) in which 102 persons who inject drugs (PWID) from Sydney, Australia were sampled, demonstrated that gender was not associated with internalized injection drug use-related stigma.<sup>57</sup>

There were 3 (23%) articles, however, that did find a significant relationship between gender and substance use-related stigma. More specifically, 2 (67%) of these studies found that WWUD perceived or experienced greater levels of substance use-related stigma,<sup>59,60</sup> and 1 (33%) study reported that MWUD experienced greater levels of substance use-related stigma.<sup>61</sup> For example, Khuat et al. (2015) found, among a sample 403 women who inject drugs (WWID) in Vietnam, that over 80% agreed that society perceives WWID to be “worse” than men who inject drugs, and 55% agreed that the community views female substance use more negatively than sex work.<sup>59</sup> In contrast, however, research from Palamar and colleagues (2012) demonstrated, among a sample of 700 PWUD in the United States, men reported higher levels of perceived rejection related to their drug use compared to women.<sup>61</sup> In addition, 6 (46%) of these articles also measured drug use-related outcomes, though none tested the moderating effect of gender on the relationship between substance use-related stigma and drug use outcomes.

### **Quantitative Stigma Measurement**

There was large variability in the measures employed to assess substance use-related stigma. Among the 27 articles that assessed stigma from the interpersonal perspective, 12 (44%) studies used 11 different, pre-existing measures of substance use-related stigma and 7 (26%) studies employed substance use-related stigma items newly developed by the authors for the purpose of the study. Additionally, 9 studies (33%) adapted an existing mental illness-related stigma measure, 3 (11%) used select items from an existing mental illness-related stigma measure, and 1 (3%) adapted an HIV-related stigma measure. Furthermore, a little over half (56%) of these studies either reported, or provided a reference for, the reliability of the employed measures, 11 (41%) studies provided information on the validity of the measure used, and only 6 (22%) reported both the reliability and validity of the measure.

Among the 13 articles that assessed stigma from the individual perspective, 5 (39%) studies used four different, pre-existing measures of substance use-related stigma, and 4 (31%) studies employed substance use-related stigma items newly developed by the study authors. Half of the collected studies (6; 46%) adapted a mental health-related stigma measure, 1 (8%) study adapted an HIV-related stigma measure, and 1 (8%) study adapted an HCV-related stigma measure. Additionally, 9 (69%) studies reported the reliability of the measures employed, 5 (39%) reported the validity, and 4 (31%) reported both. Both the variability in the stigma measures used and the absence of information on the psychometric properties of these measures limit our ability to assess if the mixed results regarding whether gender impacts the stigmatization of drug use might have been influenced by the way stigma was measured.

### **Qualitative Thematic Synthesis**

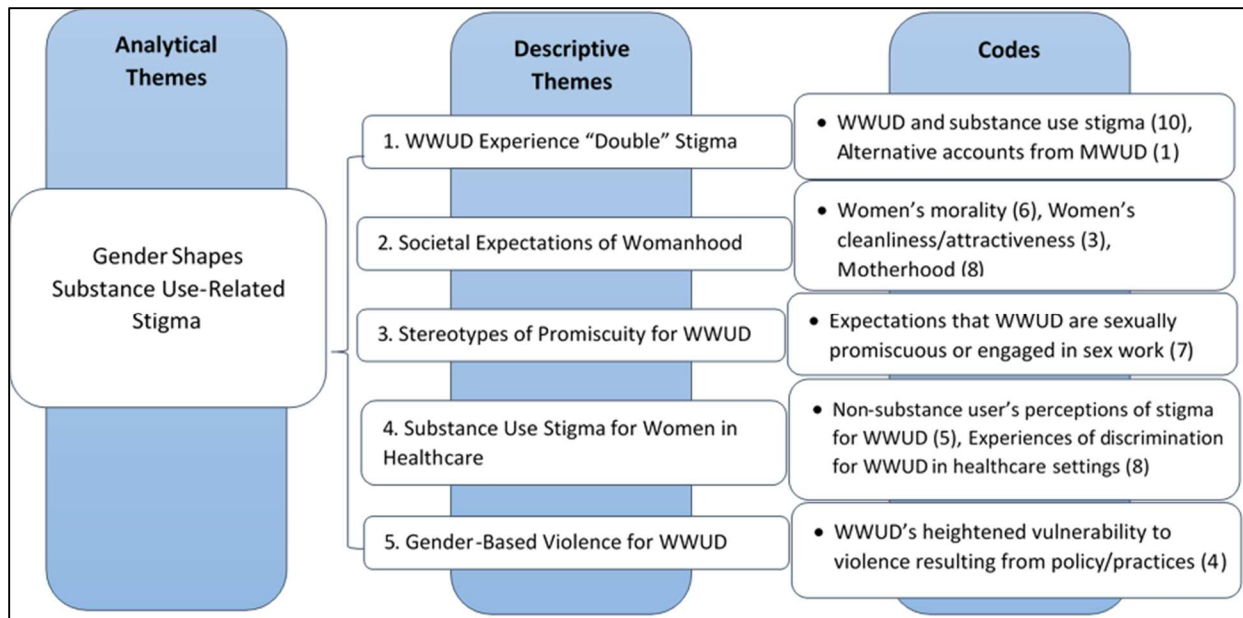
Of the 35 included qualitative articles, 7 (20%) assessed stigma from the perspective of individuals who do not use drugs (i.e., the interpersonal perspective) and 28 (80%) from the perspective of PWUD (i.e., the individual perspective). For those seven articles assessing stigma from the interpersonal perspective, the majority of the articles (4; 57%) were from North America, with fewer from Africa (2; 29%), and Asia (1; 14%). Four articles (4%) did not report participants' age, gender, or race/ethnicity. Nearly half the included studies reported participant gender (3; 43%), though none of these moved past a binary measurement of gender. In addition, fewer (2; 29%) reported the age composition of recruited participants, and only 1 (14%) reported on participants' race/ethnicity. See Table 2.3 for the full analysis of the qualitative articles assessing stigma from the interpersonal perspective.

Among the 28 studies assessing stigma from the perspective of PWUD (i.e., the individual perspective), a little over half (15; 53%) were from North America, 6 (21%) were

from Asia/the Middle East, 3 (11%) were from Australia/New Zealand, 1 (4%) was from Europe, 1 (4%) was from Africa, and 2 (7%) were global in scope. The majority of studies reported the gender of recruited participants (26; 93%), 2 of which (8%) moved past a binary measurement of gender to include persons who are transgender. Additionally, 22 (79%) studies reported participants' age and 15 (54%) reported participants' race/ethnicity. See Table 2.4 for the full analysis of the qualitative articles assessing stigma from the individual perspective.

All of the included articles contained themes related to either men or women experiencing heightened substance use-related stigma, though none referenced themes related to transgender participants' experiences with substance use stigma. Nearly all of these articles (34, 97%) highlight the experiences of WWUD with heightened substance use-related stigma.<sup>62-95</sup> One article (3%), however, illustrated that there may be contexts in which MWUD experience greater substance use-related stigma (described in greater detail below).<sup>96</sup> Within this qualitative synthesis, we developed one broad analytical theme that was further broken into five descriptive themes. The overarching analytical theme explored how gender serves to shape manifestations of substance use-related stigma. The five descriptive themes then further explored; (1) WWUD's experiences of "double" stigma, (2) societal expectations of womanhood and their impact on substance use-related stigma, (3) stereotypes of promiscuity for WWUD, (4) substance use-related stigma for women in health care, and (5) gender-based violence for WWUD (See Figure 2.2). Though these descriptive themes capture unique facets of the intersection of gender and substance use-related stigma, it is important to note that these themes were not mutually exclusive and there were instances in which they overlapped and intersected (See Tables 2.3 and 2.4).





**Figure 2.2:** The analytical themes, descriptive themes, and codes developed for a synthesis of the qualitative studies exploring the intersection of gender and substance use-related stigma ( $n = 35$ ). \*Numbers in parentheses indicate the number of articles that contained these codes.

### **Women Who Use Drugs' Experiences of "Double" Stigma**

Many (10; 29%) of the included articles contained themes focusing on WWUD's experiences of heightened levels of stigma due to their intersecting identities as a woman and as a PWUD.<sup>64,65,67,76–78,81,88,93,94</sup> These articles explored how these intersectional identities can lead WWUD to experience "double" the stigma and how this can negatively impact WWUD's well-being and lead to isolation from society. This sentiment was further illustrated through the hard to reach nature of WWUD for drug use-related research, and the potential for exclusion of this population due to anticipated stigma. One research group in Tehran, Iran discovered female drug use was so stigmatized that it was causing a high "no-show" rate for WWUD interviewees.<sup>76</sup> As such, this team determined it was inappropriate to recruit a female-only focus group in this context, thereby missing valuable information from a key population of PWUD.<sup>76</sup> There was one alternative account from Scotland, United Kingdom, however, that highlighted that there may be contexts in which MWUD may experience more severe substance use-related stigma.<sup>96</sup>

In this account, a father described experiencing more severe substance-use related stigma as a result of his benzodiazepine use, despite these drugs often being viewed as “mother’s little helper” for women in this geo-cultural context. Despite this anomalous account, however, the majority of the included articles focused on the ways in which WWUD are differentially impacted by substance use-related stigma. See Supplemental Table 2.5 for a full list of narratives corresponding to each descriptive theme.

### **Societal Expectations of Womanhood**

In addition, the articles explored how societal expectations of women’s morality (6; 17%),<sup>63,71,74,78,81,87</sup> cleanliness and attractiveness (3; 9%),<sup>62,90,93</sup> and roles as mothers (8; 23%)<sup>66,72,78,81,82,85,87,90</sup> shaped experiences of substance use-related stigma for WWUD. These studies described how substance use-related stigma can be amplified for WWUD due to the higher moral standards society has for women when compared to men. As such, substance use by women is seen as a violation of these moral expectations and results in the greater stigmatization of WWUD: ‘For example, almost all respondents suggested that HDCs [historically disadvantaged communities] believe “these are good women gone bad” and that, “when a woman drinks then her morals slide out the window.” For female “addicts”, these discourses are defined against commonly-held discourses about what it means to be a “good woman.”’ (Myers, 2009, South Africa, pg. 3).<sup>63</sup> Furthermore, studies reported that WWUD were often seen as “dirty” or as lacking womanhood, even within drug using networks, and therefore were no longer viewed as attractive. These social norms regarding what it means to be a “good”, “clean”, and “attractive” woman serve to exacerbate substance use-related stigma for WWUD.

Lastly, women face societal expectations surrounding motherhood, and studies reported that drug use was perceived to be a transgression that impeded WWUD’s ability to be “good”

mothers, especially when children were removed from their care. Additionally, this stigmatization of WWUD occurred not only from non-drug using individuals, but also from WWUD themselves in the form of internalized stigma. For example, one study from Victoria, Canada found that many WWUD described guilt and self-judgement regarding their drug use during parenting or pregnancy, regardless of the relative harm of their use.<sup>66</sup> In one alternative account, motherhood was viewed as an identity that could potentially supersede and mitigate the identity of “drug user” for WWUD interacting with pharmacists and accessing syringe services.<sup>72</sup> This dynamic was rare, however, and the intersection between cultural expectations of motherhood with drug use often contributed to increased stigmatization for WWUD.

### **Stereotypes of Promiscuity for Women Who Use Drugs**

The included articles also highlighted existing stereotypes related to promiscuity and sex work for WWUD (7; 20%).<sup>68,74,78,80,81,89,90</sup> Both WWUD and individuals who do not use drugs reported either encountering or believing negative stereotypes regarding the sexual propriety of WWUD. These stereotypes focused on the idea that WWUD engage in sexual behavior that violates social norms for women, including sex work, as a result of their drug use. The stereotypes resulted in increased stigmatization for WWUD, and in some instances, the sexual devaluation and exploitation of WWUD: ‘One participant noted that female employees with a history of drug addiction are often stereotyped by male employers as prostitutes. She stated: “It's like men employers... the managers are sleaze bags. Like, they try to get with you. You know they know you're a drug addict, they know you're in a program, you may not have money... So it's like they characterize you, you know ‘cause you're a drug addict or you're a prostitute or whatever the case may be.”’ (Earnshaw, 2013, Connecticut, US, pg. 7).<sup>89</sup> As such, existing societal mores regarding women’s sexuality and the negative stereotypes regarding WWUD’s

sexual behavior can serve to place WWUD in precarious positions that adversely impact their health and wellbeing.

### **Substance Use Stigma for Women in Healthcare**

The articles included within this descriptive theme illustrate experiences of intersectional substance use stigma for WWUD within healthcare settings. These articles include accounts of substance use-related stigma from both the perspective of non-drug using individuals (i.e., the interpersonal perspective; 5; 14%)<sup>64,72,91,92,94</sup> and from the perspective of WWUD (i.e., the individual perspective; 8; 23%).<sup>67,70,71,73,78,83,86,95</sup> In one study from South Africa, non-drug using individuals reported that WWUD are not viewed as a “policy or funding priority,” and that this omission from the policy and funding discussion within the healthcare arena further results in women being an underserved population of PWUD.<sup>94</sup> These policy and funding-related oversights result in a lack of gender-specific drug treatment and other health-related services, which could be an important barrier to care and could serve to further perpetuate vulnerability for WWUD.

The included studies from the perspective of WWUD highlight that healthcare settings are frequently sites of discrimination for WWUD based on their identities as women and as PWUD. Authors described women receiving poor quality health care, including obstetric and gynecological care, due to healthcare providers’ prejudice against WWUD. Further, many articles reported women feared CPS involvement when accessing health care, as a result of mandatory reporting policies that penalize WWUD. As such, the combination of past experiences of discrimination, WWUD’s own internalized stigma, and anticipated stigma from CPS involvement served as significant barriers to accessing care for this population: ‘Many drug-using women reported negative experiences with medical providers and only sought health

care when they were so ill they had no choice. The women generally felt that medical personnel were hostile and did not take their problems seriously... Many women reported feeling pain and discomfort during vaginal exams because doctors used the wrong size speculum or conducted the exam in a rough or rushed fashion. Others reported that providers refused to provide care once they learned of their drug use.’ (Oliva, 1999, California, US, pg. 9).<sup>86</sup> This indicates that existing intersectional gender- and substance use-related stigma has negative consequences for the physical health and treatment of WWUD.

### **Gender-Based Violence for Women Who Use Drugs**

In addition to accounts of WWUD experiencing stigmatization and discrimination in healthcare settings, the included articles also discussed how current substance use-related stigma can be intertwined with gender-based violence for WWUD (5; 14%).<sup>69,75,79,80,84</sup> This violence can occur within unregulated drug use settings, in drug treatment environments, and even in the social environments of families and intimate partnerships. For example, the following excerpt illuminates how the societal prejudice against, and devaluation of, WWUD can contribute to coercion and violence towards this group: ‘Female substance users are usually the object of greater social rejection. One informant described having been sedated by family members and forced to sign away her inheritance. Another related her alcohol abuse to depression caused by her partner’s violence, which led her to attempt suicide and resulted in hospitalization’ (Mora-Rios, 2016, Mexico City, Mexico, pg. 8).<sup>79</sup>

## **DISCUSSION**

### **Summary of the Evidence**

There was a lack of consensus across 40 quantitative studies regarding the association between gender and substance use-related stigma. Over half (22; 55% [interpersonal perspective:

$n = 12$ ; individual perspective:  $n = 10$ ]) found no significant association between gender and substance use-related stigma, 7 (18%; all from the interpersonal perspective) reported that women held more stigmatizing views of PWUD, 8 (20%; all from the interpersonal perspective) demonstrated that men held more stigmatizing views, 4 (10%; interpersonal perspective:  $n = 2$ ; individual perspective:  $n = 2$ ) identified that WWUD were more stigmatized, and 2 (5%; interpersonal perspective:  $n = 1$ ; individual perspective:  $n = 1$ ) determined that MWUD were more stigmatized. In contrast, however, there was near unanimity across the 35 qualitative studies evaluated, with the majority (34; 97% [interpersonal:  $n = 7$ ; individual:  $n = 27$ ]) highlighting WWUD's experiences of heightened stigma resulting from their intersectional gender- and drug use-related identities. One study (individual:  $n = 1$ ; 3%), however, illustrated that MWUD may also face intersectional gender- and substance use-related stigma in specific geo-cultural contexts.

The discrepancies in the impact of gender on substance use-related stigma observed across the quantitative studies, in contrast with the consistency observed across the qualitative studies, suggest that the current quantitative substance use stigma measures employed may not adequately capture the intersectional nature of gender- and substance use-related stigma, particularly for WWUD. This could be, in part, due to the large variability in measures of substance use-related stigma employed across studies. Nearly half of the included quantitative studies (17; 43%) employed one or more of 15 different substance use-related stigma measures. Additionally, 15 (37%) studies adapted a measure of mental health stigma while the remaining studies (8; 20%) either adapted measures of other stigmatized characteristics (i.e., HIV or HCV), selected specific items from existing substance use stigma measures, or developed their own items to assess substance use-related stigma. Notably, across all quantitative measures, item

content reflects PWUD as a homogeneous archetype, and did not reflect the dimensions by which gender might shape how substance use stigma is experienced (e.g., in the context of parenthood). These varied approaches to measuring substance use-related stigma are similar to the documented variability in employed measures assessing mental illness stigma,<sup>97</sup> and belie the need for synchronization regarding the operationalization of definitions and terms relating substance use-related stigma, as well as the standardization of quantitative measures.

In contrast with the quantitative literature, however, the synthesis of the qualitative literature demonstrates that there is nearly universal agreement that WWUD experience heightened levels of substance use-related stigma, particularly in healthcare settings, from societal expectations of women's morality, cleanliness, and motherhood. Qualitative research methods are uniquely positioned to explore WWUD's experiences, processes, and meaning making surrounding substance use-related stigma through describing these phenomena in women's own words.<sup>98,99</sup> As such, the qualitative literature on the impact of gender on substance use-related stigma has been able to capture the intersectional nature of stigmatized identities for WWUD in a way that the quantitative measures of stigma have, thus far, not been designed to. Consequently, future substance use-related stigma scale development should draw from the existing qualitative literature, as well as existing intersectional stigma measures (i.e., measures assessing gendered racism), to better incorporate intersectionality in the creation of items, which could serve to better capture the experiences of WWUD with substance use-related stigma.<sup>100,101</sup> Further, accurately capturing the intersectional nature of substance use-related stigma for WWUD will serve as the foundation for the development of tailored interventions targeting substance use-related stigma, thereby reducing the harms associated with this form of stigma for

WWUD (i.e., depression symptoms, reduced healthcare utilization, and gender-based violence).<sup>1,2</sup>

## **Limitations**

The current systematic review was limited in a number of important ways. First, only those articles published in English were analyzed, which has potentially resulted in the oversampling of research from North America, Western Europe, and Australia. A total of 35 articles were excluded for not being in English; 10 (28%) were in Spanish, 9 (25%) in German, 6 (17%) in French, 2 (6%) in Chinese, 2 (6%) in Japanese, 2 (6%) in Dutch, 2 (6%) in Swedish, 1 (3%) in Greek, and 1 (3%) in Portuguese. Despite the fact that the majority of the included and excluded articles came from North America, Western Europe, and Australia, the exclusion of these articles could have potentially biased our findings. Additionally, the lack of a consensus on the definition of stigma in the extant literature,<sup>1</sup> the use of multiple forms of stigma measures, and the omission of sample characteristics has limited the robustness of the findings from the systematic review and made undertaking a meta-analysis impractical.<sup>18</sup> This review, however, has also served to expose existing gaps and inconsistencies in the scientific literature, which can provide the foundation for future research on intersectional gender- and substance use-related stigma. Further, given that the existing systematic review guidelines and study quality assessments for quantitative research have been developed for randomized controlled trials, and that the majority of the included quantitative studies were observational in nature, there is a potential for bias in the results of this review.<sup>102</sup> In an effort to protect against this bias, inclusion and exclusion criteria were determined prior to analyses, and was implemented by two independent raters screening all articles for inclusion (SAM, BD) and scoring the study quality of all included articles (SAM, NC).<sup>102</sup> Additionally, in an effort to avoid any bias introduced by



an individual researcher in the interpretation of the qualitative synthesis, all themes and codes were developed iteratively and agreed upon by two social scientists with previous qualitative research experience (SAM, LRS). Furthermore, due to the sensitive nature of drug use and experiences of stigma, there may be response bias in each individual study included in the review. To further assess for this source of bias, and to aid in the interpretation of results, study quality scores were presented for each study included in the review. Lastly, critics of the thematic synthesis technique employed in the review of the qualitative literature argue that this method removes context from study findings, a core strength of qualitative research.<sup>20</sup> This approach, however, serves to identify broad themes across the extant literature that can be further evaluated and applied to the development of tailored intervention strategies.<sup>20</sup>

### **Implications**

To our knowledge, this is the first mixed-methods systematic review of the intersection of gender- and substance use-related stigma. The results of current review and synthesis contribute valuable insights into the experiences of WWUD with substance use-related stigma. Specifically, this review illuminates the gendered social norms that produce heightened levels of intersectional substance use- and gender-related stigma and gender-based violence for WWUD. Furthermore, the results of this review serve to identify potential methodological weaknesses in existing measurement of the gendered impact of substance use-related stigma on drug use-related behavioral outcomes. For example, current quantitative approaches to assessing substance use-related stigma are not only lacking a consistent operationalization of stigma, but also have not been designed to address the unique experiences of WWUD with stigma. As such, the equivocal nature of the conclusions drawn across the quantitative studies in contrast with the near-consensus achieved in the qualitative studies serves to highlight the need for intersectional

approaches to substance use-related stigma research and gender-responsive scale development. Furthermore, none of the included studies assessed the moderating impact of gender on the relationship between substance use-related stigma and drug use-related outcomes (e.g., drug misuse or drug use risk behaviors). Future research should therefore seek to understand how intersectional gender- and substance use-related stigma impact drug use processes for MWUD and WWUD. This information could be crucial for the adaptation and development of gender-responsive treatments and interventions, like the gender-responsive program developed for incarcerated women in California, USA based on the *Helping Women Recover and Beyond Trauma* curricula,<sup>101</sup> that targets substance use and related risk behaviors. Adapting this intervention to address intersectional gender- and substance use-related stigma will likely require that informational materials and workshop sessions take into account the ways societal gender roles and expectations affect how women navigate drug use, treatment, and structural-level consequences (e.g., incarceration and CPS involvement).<sup>103</sup> More specifically, our work external to this review has observed that substance use-related risk reduction intervention effects were greatest in women-only substance using networks, likely due to the enhanced agency women had over their own behavior within these settings.<sup>103</sup> As such, women-only substance using networks could be important sites for efforts targeting substance use-related stigma and risk behaviors.

Further, the findings from the current dissertation demonstrate that WWUD experience intersectional stigma and discrimination in health care settings, further perpetuating barriers to accessing necessary care.<sup>104</sup> This suggests a need to develop interventions targeting substance use-related and intersectional stigma for WWUD. Specifically, it is recommended that existing interventions addressing HIV-related stigma among healthcare professionals, like the *Finding Respect and Ending Stigma around HIV* (FRESH) workshop,<sup>104</sup> be adapted to address

intersectional gender- and substance use-related stigma within these healthcare settings. The FRESH workshop involves bringing together healthcare workers and people living with HIV (PLWH) in informational and stigma-reducing activities in order to reduce HIV-related stigma among healthcare professionals and improve HIV stigma-related positive coping among PLWH.<sup>104</sup> Consequently, the development of these tailored intervention and harm reduction efforts can target the disproportionate harms WWUD experience and thereby more effectively limit the transmission of infections like HIV and HCV and prevent overdose fatalities.

## **ACKNOWLEDGEMENTS**

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**Table 2.1:** A systematic review of quantitative studies investigating the intersection of gender and substance use stigma from the interpersonal perspective ( $n = 27$ ).

<i>Actor Manifestations of Stigma</i>										
Author (Year)	Study characteristics			Participant characteristics			Stigma-related variables	Summary of results	Quality Score	
	<i>n</i>	Population	Location	Design	Age	Gender				Race
Fonti (2016)	147	Maternity health care workers (71% midwives)	Australia	Cross-sectional survey design	51% were older than 40.	NR	NR	Adapted measure of attitudes of health care professionals towards women who use substances during pregnancy.	The majority of participants held positive or neutral views towards women who use substances in pregnancy. Midwives had the lowest attitudinal scores (i.e. most positive views) when compared to other health care professionals.	10
Mundon (2015)	155	Clinical psychology doctoral students	San Francisco Bay Area (US)	Factorial survey-vignette design	50% 20-29 years, 37.2% 30-39, 9% 40-49, 3.8% 50-59	72.3% women, 24.9% men, 1.9% transgender, 1.3% other	66.2% Caucasian/White, 14.9% Asian, 6.1% Hispanic/Latino, 4.7% Black/African American, 5.2% Other, 3.4% Mixed	Ratings of Emotional Attitudes of Clients by Treators (REACT). *Only negative items.	Across diagnoses (MDD, cocaine dependence, and alcohol dependence) women had higher REACT scores (i.e. more negative emotional attitudes) when compared to men and transgender participants.	13
Brown (2015)	250	College students	Midwestern, US	Cross-sectional survey design	Mean: 18.8 years, Range: 18-25	52% were women	90% Caucasian	The Social Distance Scale for Substance Users (SDS)	Women reported significantly higher levels of stigma than men on the AS for	12

**Table 2.1:** A systematic review of quantitative studies investigating the intersection of gender and substance use stigma from the interpersonal perspective (Continued) ( $n = 27$ ).

<i>Actor Manifestations of Stigma</i>										
Author (Year)	Study characteristics				Participant characteristics			Stigma-related variables	Summary of results	Quality Score
	<i>n</i>	Population	Location	Design	Age	Gender	Race			
Challapallisri (2015)	226	Doctors	Hyderabad, India	Prospective survey design.	NR	50% men, 50% women	NR	The Affect Scale of Substance Users (AS) Adapted Forcing Treatment Scale (FTS) A questionnaire that measured perceptions about people with 7 psychiatric disorders. (Hayward & Bright)	marijuana and heroin. No gender difference in SDS scores.	7
Kulesza (2015)	899	Adults	Project Implicit Website (US)	Web-based, cross-sectional, survey design.	Mean: 38.97 years, Range: 19-90	62.4% were women, 37.6% were men.	69.9% Caucasian, 13.2% Black/African American, 7.3% mixed race,	Adapted Social Distance Scale to reference PWID. 2 items measuring support for NSPs and SIFs. 1 item assessing inclination toward helping/punishing PWID.	Male gender was associated with higher support for NSPs and SIFs.	14

**Table 2.1:** A systematic review of quantitative studies investigating the intersection of gender and substance use stigma from the interpersonal perspective (Continued) ( $n = 27$ ).

<i>Actor Manifestations of Stigma</i>										
Author (Year)	Study characteristics			Participant characteristics			Stigma-related variables	Summary of results	Quality Score	
	<i>n</i>	<i>Population</i>	<i>Location</i>	<i>Design</i>	<i>Age</i>	<i>Gender</i>				<i>Race</i>
Flórez (2015)	1,235	Latinx and African American church-based participants	Long Beach, CA (US)	Cross-sectional survey design.	45.6% 31-50, 29.2% 18-30, 25.2% 51+	63.2% women, 36.8% men.	34.4% Black/African American, 65.7% Latinx	A modified Ronzani's alcoholism stigma scale consisting of 5 items exploring stereotypes of people who use drugs.	Men had higher drug use stigma scores, as did older adults and those with less education.	13
Meurk (2014)	1,263	Queensland residents	Queensland, Australia	Cross-sectional computer assisted telephone interview.	30.6% 65+, 22.6% 55-64, 18.6% 45-54, 16.5% 35-44, 7% 25-34, 4.3% 18-24	50.3% women, 49.7% men.	NR	Participants presented with 2 scenarios: John (addicted to alcohol) and Peter (addicted to heroin)	Women were 0.73 times less likely to agree with coerced heroin addiction treatment.	13
van Boekel (2014)	723	Stakeholders (general public, practitioners, mental health/addiction specialists, and clients)	The Netherlands	Cross-sectional online survey.	Public: 49.06 (mean), GP's: 47.6 (mean), Specialists: 43.52 (mean), Clients: 40.92 (mean)	47.3% women, 52.4% men	NR	1. Stereotypical beliefs about people with SUDs (7 items) 2. Attribution beliefs about people with SUDs (5 items) 3. Perceptions of the chances for SUDs to lead a normal life (3 items)	There is no association between gender and desired social distance for people with SUDs.	14

**Table 2.1:** A systematic review of quantitative studies investigating the intersection of gender and substance use stigma from the interpersonal perspective (Continued) ( $n = 27$ ).

<i>Actor Manifestations of Stigma</i>										
Author (Year)	Study characteristics			Participant characteristics			Stigma-related variables	Summary of results	Quality Score	
	<i>n</i>	Population	Location	Design	Age	Gender				Race
Luo (2013)	848	Residents	Hunan Province, China	Cross-sectional survey design.	Mean: 38 Range: 16-65	45.9% women, 54.1% men	NR	4. Social distance (9 items) Vignettes: heroin, ketamine, meth, and "normal". Stereotyping & Social Distance Scales (Link)	No association between gender and views of drug dependence.	12
Crisp (2000)	1,737	Adults	United Kingdom	Cross-sectional survey design.	11% 16-24, 68.1% 25-64, 20.8% 65+	55% women, 45% men	95% White	Scale developed from work of Hayward & Bright (1997)	There were "only minor differences" in opinions of people with drug dependence.	11
Palamar (2013)	531	Adults	United States	Cross-sectional internet-based survey.	Mean: 29.14 Range: 18-64	70.6% women, 29.4% men	32.2% Non-White, 67.8% White	Drug Use Stigmatization Scale	Females were less likely to report that addiction is a choice. Females and those that reported high levels of stigmatization were more likely to report that cocaine use is always unsafe.	12

**Table 2.1:** A systematic review of quantitative studies investigating the intersection of gender and substance use stigma from the interpersonal perspective (Continued) (*n* = 27).

<i>Actor Manifestations of Stigma</i>										
Author (Year)	Study characteristics			Participant characteristics			Stigma-related variables	Summary of results	Quality Score	
	<i>n</i>	Population	Location	Design	Age	Gender				Race
van Boekel (2014)	347	Healthcare professionals: General practitioners, general psychiatry services, & addiction specialists.	Netherlands	Cross-sectional survey design.	GP Mean: 47.6, Psychiatry Mean: 44.8, Addiction Mean: 42.0.	54.5% women, 45.5% men.	NR	Medical Condition Regard Scale (MCRS) and Comparable questions from the Attribution Questionnaire	Gender of healthcare professional does not predict MCRS score.	15
Palamar (2012)	1021	Young adults	New York (US)	Cross-sectional street- and internet-based survey design.	Mean: 20.32 Range: 18-25	53.5% women, 46.5% men.	43.7% White, 13.4% Black, 16.7% Hispanic/Latinx, 18.1% Asian American, 8.1% Other.	Drug Use Stigmatization Scale for each of the following substances (Marijuana, Powder Cocaine, Ecstasy, Opioids, & Amphetamines)	Gender was not associated with the stigmatization of any of the substances investigated.	13
Sorsdahl (2012)	868	Members of the general public.	South Africa	Cross-sectional street-based survey method with vignettes.	Mean: 27	51% women, 49% men.	56% Black, 13% White/Asian, 30% Coloured.	8 vignettes portraying alcohol, cannabis, meth, and heroin. Attribution Questionnaire – Short Form (AQ-9)	Respondents were more likely to feel coercion into treatment was more acceptable for males who use substances. Respondents also reported avoiding female cannabis users more than male cannabis users and that	13



**Table 2.1:** A systematic review of quantitative studies investigating the intersection of gender and substance use stigma from the interpersonal perspective (Continued) (*n* = 27).

<i>Actor Manifestations of Stigma</i>										
Author (Year)	Study characteristics			Participant characteristics			Stigma-related variables	Summary of results	Quality Score	
	<i>n</i>	Population	Location	Design	Age	Gender				Race
Li (2013)	211	MMT clients and providers	Sichuan, China	A longitudinal randomized MMT CARE intervention.	Standard: 40.5% ≤ 35, 36% 36-40, 23.6% 41+	Standard: 66.3% men, 33.7% women. Treatment: 64.4% men, 35.6% women	NR	coercion into treatment was acceptable for female methamphetamine users compared to their male counterparts.  Participant gender was associated with the attribution stereotype of “anger” to vignette characters.	18	
Korszun (2012)	760	Medical students	United Kingdom	Cross-sectional, national	Mean: 23.8 Range: 17-31	67% women, 33% men.	64.9% White, 19.1% South Asian, 5.9% Chinese, 2%	A scale assessing provider’s perceived stigma associated with working in a drug-related locale (9 items).	Female medical students had significantly higher regard for	12

**Table 2.1:** A systematic review of quantitative studies investigating the intersection of gender and substance use stigma from the interpersonal perspective (Continued) ( $n = 27$ ).

<i>Actor Manifestations of Stigma</i>										
Author (Year)	Study characteristics				Participant characteristics			Stigma-related variables	Summary of results	Quality Score
	<i>n</i>	Population	Location	Design	Age	Gender	Race			
Nabors (2012)	425	College students	Location not specified (author is based in Ohio, US)	Mixed methods, cross-sectional vignette study.	Range: 18-60 53% between 18 and 20, 41% 21 and 30.	58.4% women, 41.6% men.	83% Caucasian, 9% African American, 1% Hispanic, 1% Asian, 6% Other.	Five vignettes depicting an adolescent who misuses alcohol, uses marijuana, or occasionally drinks and whether they've received treatment.  Items assessing participants' liking of, desire to help, and beliefs about the adolescent's academic progress.	IV drug users than male students.  Female participants reported stronger desire to help across vignette types when compared to males.  Males, however, reported higher levels of liking and beliefs about academic progress when compared to females.	8
Brown (2011)	565	College Students	Midwestern University (US)	Cross-sectional survey design.	Range: 18-25 Mean: 18.6	68.5% women, 31.5% men.	96.1% Caucasian	*Three mental illness stigma measures were modified to target substance users: Social Distance Scale (SDS) Dangerousness Scale (DS)	Women had higher scores on the SDS and AS when compared to men (indicating women held more stigmatizing views), but no significant gender difference was	10

**Table 2.1:** A systematic review of quantitative studies investigating the intersection of gender and substance use stigma from the interpersonal perspective (Continued) ( $n = 27$ ).

<i>Actor Manifestations of Stigma</i>										
Author (Year)	Study characteristics			Participant characteristics			Stigma-related variables	Summary of results	Quality Score	
	<i>n</i>	<i>Population</i>	<i>Location</i>	<i>Design</i>	<i>Age</i>	<i>Gender</i>				<i>Race</i>
Adlaf (2009)	4,078	7 <sup>th</sup> -12 <sup>th</sup> graders	Ontario, Canada	Cross-sectional survey design.	Mean: 14.9	48.7% women, 51.3% men.	NR	Affect Scale (AS) Four drug addiction social distance items adapted from the World Psychiatric Association's Schizophrenia Open the Door project.	found for the DS measure. There is no relationship between gender and drug addiction stigma.	13
Corrigan (2007)	968	Adults	United States	Cross-sectional internet-based survey and vignette design.	Mean: 47.0	51.9% were women, 48.1% men.	72.5% White, 11.7% Black, 11% Hispanic, 4.8% Other.	Attribution Questionnaire (Primary Stigma)  Seven items assessing family stigma/courtesy stigma.	Women were more likely to endorse dangerousness for schizophrenia and substance dependence (though this was not significant).  Across conditions: Women were less likely to endorse stigma, more likely to express pity and help and less likely to avoid and blame.	11
Kulesza (2016)	899	Volunteers at Project Implicit	United States-based website	Implicit association test and	Mean: 39.0	62.4% women, 37.6% men.	69.9% White, 13.2% African American, 7.3%	The Brief Implicit Association Test	There was no significant effect of gender on	13

**Table 2.1:** A systematic review of quantitative studies investigating the intersection of gender and substance use stigma from the interpersonal perspective (Continued) ( $n = 27$ ).

<i>Actor Manifestations of Stigma</i>										
Author (Year)	Study characteristics			Participant characteristics			Stigma-related variables	Summary of results	Quality Score	
	<i>n</i>	Population	Location	Design	Age	Gender				Race
Kennedy-Hendricks (2016)	1,620	Adults	United States	Internet-based experiment and vignette design. Participants were randomly assigned to vignette narratives.	12.2% 18-24, 18.4% 25-34, 15.9% 35-44, 16.5% 45-54, 19.7% 55-64, 17.4% 65+	51.6% women, 48.4% men.	73.4% White only, 11.4% Black only, 23.1% Other. 15.2% Hispanic and 84.8% Non-Hispanic	(Addiction Stigma) Explicit stigma vignette & six items about PWID punishment/help.	implicit or explicit addiction stigma.	14
Morton (1976)	83	People who attended a symposium on employing ex-addicts.	White Plains, NY	Cross-sectional survey design.	24.1% Under 30, 75.9% Over 30.	42.2% women, 57.8% men.	NR	Beliefs about people with addiction to opioid pain relievers, perceptions of the effectiveness of treatment, attitudes about policy. Positive and Negative Affect Scale (PANAS)	Gender was not related to attitudes towards employing ex-addicts.	10
Diaz (2008)	421	Health professionals	Puerto Rico (US)	Exploratory mixed methods design, QUAL → quan.	NR	76% women, 24% men.	NR	Translated and adapted version of the Old Fashioned and Modern Sexism Scale (9 items).	Sexism scores were positively correlated with substance use stigma scores among health care	8

**Table 2.1:** A systematic review of quantitative studies investigating the intersection of gender and substance use stigma from the interpersonal perspective (Continued) (*n* = 27).

<i>Actor Manifestations of Stigma</i>										
Author (Year)	Study characteristics			Participant characteristics			Stigma-related variables	Summary of results	Quality Score	
	<i>n</i>	Population	Location	Design	Age	Gender				Race
Brener (2016)	90	Alcohol or other drugs (AOD) workers	New South Wales, Australia	Cross-sectional vignette and survey design.	Mean: 41	52.2% women, 47.8% men.	NR	Translated and adapted Substance Abuse Attitude Survey (12 items).	professionals (Though the highest correlation was between homophobia and AIDS-related stigma).	9
Nielson (2010)	864	Adults	United States	Cross-sectional survey design.	Mean: 46.0	57% women, 43% men.	100% White	Brener and von Hippel's scale of Attitudes towards PWID (10 items).	Male gender is positively associated with negative attitudes towards PWID	13
Dunn (2009)	155	Residents of University of New Mexico School of Medicine	New Mexico (US)	Cross-sectional survey and vignette design.	Mean: 31.8	44.7% women, 55.3% men.	69% White, 16% Hispanic, 16% Other.	Attitudes towards drug rehabilitation spending.	Male gender was negatively associated with attitudes toward drug rehabilitation spending.	12

**Table 2.1:** A systematic review of quantitative studies investigating the intersection of gender and substance use stigma from the interpersonal perspective (Continued) (*n* = 27).

<i>Actor Manifestations of Stigma</i>									
Author (Year)	Study characteristics			Participant characteristics			Stigma-related variables	Summary of results	Quality Score
	<i>n</i>	<i>Population</i>	<i>Location</i>	<i>Design</i>	<i>Age</i>	<i>Gender</i>			
							(including alcohol and other drug problems)		

**Table 2.2:** A systematic review of quantitative studies investigating the intersection of gender and substance use stigma from the individual perspective ( $n = 13$ ).

<i>Target Manifestations of Stigma</i>										
Author (Year)	Study characteristics			Participant characteristics			Stigma-related variables	Summary of results	Quality Score	
	<i>n</i>	Population	Location	Design	Age	Gender				Race/Ethnicity
Kluat (2015)	403	Women who inject drugs	Hanoi & Ho Chi Minh City, Vietnam	Cross-sectional survey design.	Hanoi Mean: 32.8 HCMC Mean: 27.3	100% women	NR	Asked participants 3 questions about how they perceived society viewed WWID.	Over 80% of the sample agreed society viewed WWID to be worse than MWID and of "bad character." Over half of the sample agreed society viewed female drug use as worse than sex work.	7
van Boekel (2016)	186	Individuals in treatment for substance use disorders.	The Netherlands	Cross-sectional survey design.	Mean: 40.9 Range: 16-70	31.2% women, 67.7% men.	NR	The Dutch version of the Discrimination and Stigma Scale (DISC-12) assessed experienced and anticipated stigma.	Gender did not significantly predict experienced or anticipated substance use stigma.	13
Rivera (2014)	132	People who inject drugs accessing syringe pharmacy	Manhattan/the Bronx, New York (US)	Cross-sectional survey design.	Mean: 42.7	19.9% women, 80.1% men.	55.3% Lantinx, 31.1% White/Other, 13.6% Black	The Attitudes Towards Injection Drug Users Scale	Gender was not significantly related to PWID-related stigma scores.	13
Wilson (2014)	236	Needle and syringe program clients	Western Sydney, Australia	Cross-sectional survey design.	Mean: 39.0	34.3% women, 64.8% men, 0.8% transgender	22% Aboriginal, 78% Non-Aboriginal	Five items assessing perceived discrimination from NSP staff/health care workers.	Perceived stigma and discrimination from general health workers was not correlated with gender or any injection outcome variables.	11

**Table 2.2:** A systematic review of quantitative studies investigating the intersection of gender and substance use stigma from the individual perspective (Continued) (*n* = 13).

<i>Target Manifestations of Stigma</i>										
Author (Year)	Study characteristics			Participant characteristics			Stigma-related variables	Summary of results	Quality Score	
	<i>n</i>	Population	Location	Design	Age	Gender				Race/Ethnicity
Crawford (2012)	647	Recently initiated PWID and PWUD (heroin, cocaine, crack)	New York City, NY (US)	Cross-sectional survey study.	Median: 33	29.5% women, 70.5% men.	48.8% Black, 37.1% Hispanic, 14.1% White/Other	Items assessing experiences of discrimination for a variety of characteristics (including drug use)	No significant gender differences in drug use discrimination.	12
Luoma (2009)	252	Adults in treatment for substance use related problems.	United States	Cross-sectional survey design.	Mean: 30.5 Range: 18-63	42.1% women, 57.5% men.	79% Caucasian, 12% Latinx, 7% Other, 4% African American, 4% Native American, 1% Asian/Pacific Islander	Perceived Stigma of Addiction Scale (PSAS) Internalized Shame Scale (ISS) Internalized Stigma of Substance Abuse (ISSA) Stigma-Related Rejection Scale (SRS) – Adapted for substance use.	Perceived stigma (PSAS scores) was not related to gender.	10
Semple (2007)	146	Heterosexual, HIV negative adult women who use meth.	San Diego, CA (US)	Cross-sectional survey design.	Mean: 35.4 Range: 18-56	100% women	45.2% Caucasian, 30.8% African American, 13.7% Latina, & 10.3% Other	Social stigma of meth use (14 items)	Women who had higher depressive symptoms had higher scores on social stigma of meth use.	12
Semple (2005)	292	Heterosexual adults who use meth.	San Diego, CA (US)	Cross-sectional	Mean: 37.8	27.7% women,	54.8% Caucasian	Three stigma scales developed for the study: (1)	Gender was not correlated with experiences or expectations of rejection.	11



**Table 2.2:** A systematic review of quantitative studies investigating the intersection of gender and substance use stigma from the individual perspective (Continued) (*n* = 13).

<i>Target Manifestations of Stigma</i>										
Author (Year)	Study characteristics			Participant characteristics			Stigma-related variables	Summary of results	Quality Score	
	<i>n</i>	Population	Location	Design	Age	Gender				Race/Ethnicity
Friedman (2016)	751	People who inject drugs, High-risk heterosexuals, & MSM	New York (US)	Cross-sectional survey design.	PWID Mean: 40.9 HRH Mean: 32.6 MSM Mean: 25.6	PWID: 44% women, 56% men. HRH: 48% women, 52% men, (4 trans participants not in analyses) MSM: 100% men	PWID: 54% Black, 57% Hispanic. HRH: 71% Black, 66% Hispanic. MSM: 56% Black, 54% Hispanic.	Expectations of rejection, (2) Experiences of rejection, & (3) Stigma coping strategies. Five items assessing perceived attacks on participant dignity, witnessing dignity attacks on others, characteristics participants were attacked for, reactions to dignity attacks, and who committed the dignity attack.	1% of PWID reported their dignity being attacked due to their gender – though MSM were more likely to report this than PWID. Also, 41% of dignity attacks for PWID came from mothers. And mothers were more likely to be reported as sources of dignity attacks for PWID than HRH or MSM.	13
Cama (2016)	102	People who inject drugs accessing an NSP	Sydney, Australia	Cross-sectional survey design.	Mean: 39.4	23% women, 75% men, 2% transgender	NR	Seven items from an adapted Internalized Stigma of Mental Illness (ISMI) Five items to assess perceptions of discriminatory treatment by staff at the NSP.	Gender was not correlated with internalized stigma.	11

**Table 2.2:** A systematic review of quantitative studies investigating the intersection of gender and substance use stigma from the individual perspective (Continued) (*n* = 13).

<i>Target Manifestations of Stigma</i>										
Author (Year)	Study characteristics			Participant characteristics			Stigma-related variables	Summary of results	Quality Score	
	<i>n</i>	Population	Location	Design	Age	Gender				Race/Ethnicity
Senple (2009)	402	Heterosexual adults who use meth	San Diego, CA (US)	Cross-sectional survey design.	Mean: 36.9 Range: 18-63	33% women, 67% men.	55% Caucasian, 29.9% African American, 15.1% Latinx.	14 item social stigma scale comprised of two dimensions: (1) Culturally-induced expectations of rejection, and (2) experiences of rejection.	In ethnicity by gender analyses – no significant gender differences in rejection were found.	10
Palamar (2012)	700	Adults	United States	Internet-based survey design.	Mean: 29.3	69% women, 31% men.	67.1% White, 12.2% Hispanic, 9.1% Asian American, 7.3% Black, 4.3% Other	10-item Stigma of Drug Users Scale. Measures perceptions of public stigma towards users. Developed a perceived rejection and secrecy scale: 2 factors – (1) perceived rejection and (2) secrecy (anticipated stigma)	Older and male PWUD reported greater perceived rejection for substance use. There were no gender differences in secrecy regarding substance use.	12
Heath (2016)	440	Adult PWID	Bangkok, Thailand	Cross-sectional survey design.	Median: 38	19.5% women, 80.5% men.	NR	One item of health care avoidance: "Do you sometimes avoid accessing healthcare services because you are a drug user?"	There were no gender differences in health care avoidance.	13

**Table 2.3:** A systematic review of qualitative studies investigating the intersection of gender and substance use stigma from the interpersonal perspective ( $n = 7$ ).

<i>Actor Manifestations of Stigma</i>									
First author (year)	Study characteristics			Participant characteristics				Theme(s)	Quality Score
	<i>n</i>	Population	Location	Method	Age	Gender	Race/Ethnicity		
McKenna (2011)	10 novels, 3 seasons of Breaking Bad, 8 movies, 6 TV episodes	Media portrayals of meth use.	United States	Content analysis of popular media.	NR	NR	NR	<b>Theme:</b> Societal Expectations of Womanhood <b>Code – Cleanliness/Attractiveness</b>	8
Myers (2009)	20	Key informants from a Historically Disadvantaged Community	Cape Town, South Africa	In-depth interviews.	NR	NR	NR	<b>Theme:</b> Societal Expectations of Womanhood <b>Code- Morality</b>	8
Beckerleg (2008)	300 (survey)	Producers and consumers of khat	Kenya, Uganda, and Rwanda	Field work and survey interviews.	NR	NR	NR	<b>Theme:</b> Stereotypes of Promiscuity for WWUD; Societal Expectations of Womanhood <b>Code – Morality</b>	6
Deng (2007)	34	HIV+ PWUD, their family members, and key informants in the Dai community	Yunnan, China	Participatory observations, in-depth interviews, focus group discussions, & community mapping.	Range: 25-51	7.7% women, 92.3% men	NR	<b>Theme:</b> Societal Expectations of Womanhood <b>Code - Motherhood</b>	9
Laudet (1999)	62	Male partners of crack-dependent mothers	New York City, NY (US)	Semi-structured life history interviews.	Range: 21-58	100% men	81% African American, 13% Hispanic, 6% White	<b>Theme:</b> Stereotypes of Promiscuity for WWUD; Societal Expectations of Womanhood <b>Codes – Motherhood &amp; Cleanliness/Attractiveness</b>	8

**Table 2.3:** A systematic review of qualitative studies investigating the intersection of gender and substance use stigma from the interpersonal perspective (Continued) ( $n = 7$ ).

<i>Actor Manifestations of Stigma</i>									
First author (year)	Study characteristics			Participant characteristics			Theme(s)	Quality Score	
	<i>n</i>	<i>Population</i>	<i>Location</i>	<i>Method</i>	<i>Age</i>	<i>Gender</i>			<i>Race/Ethnicity</i>
Fielder (2005)	25	People who use drugs (HIV+ and HIV-)	Connecticut (US)	Mixed methods study with qualitative focus groups.	NR	60% were women	NR	<b>Theme:</b> Substance Use Stigma for Women in Health Care	8
Greenfield (2014)	32	Substance use treatment agencies/ stakeholder	Albuquerque, NM (US)	Semi-structured interviews.	NR	NR	NR	<b>Theme:</b> Substance Use Stigma for Women in Health Care	8

**Table 2.4:** A systematic review of qualitative studies investigating the intersection of gender and substance use stigma from the individual perspective ( $n = 28$ ).

<i>Target Manifestations of Stigma</i>									
First author (year)	Study characteristics			Participant characteristics			Themes	Quality Score	
	<i>n</i>	Population	Location	Method	Age	Gender			Race/Ethnicity
King (2016)	94	Key populations (FSW, PWID, PLWH, recently incarcerated) and outreach workers/stakeholders	Tajikistan	Key informant interviews, roundtables, and focus groups.	NR	NR	NR	<b>Themes:</b> WWUD Experience “Double” Stigma; Societal Expectations of Womanhood <b>Code – Cleanliness/Attractiveness</b>	8
Myers (2016)	37	Young women who use AOD’s and service providers	South Africa	Focus group discussions and in-depth interviews.	Mean: 18.7 Range: 16-21	100% women	52% Black/African American, 48% Coloured	<b>Themes:</b> WWUD Experience “Double” Stigma; Substance Use Stigma for Women in Health Care	8
Howard (2015)	20	Postpartum women who had opioid use disorders (prescription medications and synthetic narcotic analgesics only)	Maine, Massachusetts, Rhode Island (US)	Focus group interviews.	Range: 20-38 Mean: 28	100% women	100% White	<b>Theme:</b> Substance Use Stigma for Women in Health Care	9
Orza (2015)	766	Women living with HIV	94 countries (global)	Mixed methods study with open ended questions on an online survey.	Mean: 32.98	100% women	8.1% Indigenous	<b>Theme:</b> Substance Use Stigma for Women in Health Care	8
Morse (2015)	24	Women in drug treatment court.	New York (US)	Focus groups.	DTC Mean: 39.9	79.2% women, 20.8% men	NR	<b>Themes:</b> WWUD Experience “Double” Stigma	8

**Table 2.4:** A systematic review of qualitative studies investigating the intersection of gender and substance use stigma from the individual perspective (Continued) (*n* = 28).

<i>Target Manifestations of Stigma</i>									
First author (year)	Study characteristics			Participant characteristics			Themes	Quality Score	
	<i>n</i>	Population	Location	Method	Age	Gender			Race/Ethnicity
		service providers, and staff.			Provider Mean: 45.7 Staff Mean: 42.8				
Benoit (2015)	34	Parents who have used, or currently use, substances.	Victoria, British Columbia (Canada)	In-person interviews (part of a larger mixed methods parent study)	Mean: 29	76% women, 24% men.	50% Aboriginal, 44% White, 6% Visible Minority	<b>Theme:</b> Societal Expectations of Womanhood <b>Subtheme – Motherhood</b>	8
Spooner (2015)	19	Women who inject drugs	Java, Indonesia	In-depth interviews.	Range: 19-36 Mean: 25	100% women	Most were Javanese, 10.5% had mixed ethnic background.	<b>Themes:</b> WWUD Experience “Double” Stigma; Substance Use Stigma for Women in Health Care	8
Jessell (2015)	46	Young adults who reported non-medical prescription opioid use.	New York (US)	Mixed methods study with in-depth semi-structured interviews.	Range: 18-32 Mean: 25.3	39% women, 59% men, and 2% transgender	69.6% White, 19.6% Latinx, 6.5% Black/African American, 4.3% Asian/Pacific Islander	<b>Theme:</b> Stereotypes of Promiscuity for WWUD	9
McNeil (2015)	23	People who smoke crack and access the SSR	Vancouver, Canada	Ethnographic observation and in-depth interviews.	Range: 27-59	48% women, 52% men.	35% identified as a visible minority.	<b>Theme:</b> Gender-Based Violence for WWUD	8

**Table 2.4:** A systematic review of qualitative studies investigating the intersection of gender and substance use stigma from the individual perspective (Continued) (*n* = 28).

<i>Target Manifestations of Stigma</i>									
First author (year)	Study characteristics			Participant characteristics			Themes	Quality Score	
	<i>n</i>	<i>Population</i>	<i>Location</i>	<i>Method</i>	<i>Age</i>	<i>Gender</i>			<i>Race/Ethnicity</i>
Chandler (2014)	19	Opioid-dependent adults in the antenatal/postnatal period	Scotland, UK	Longitudinal qualitative interviews.	Range: 23-39	74% women, 26% men.	100% White	<b>Theme:</b> WWUD Experience “Double” Stigma	8
Morse (2014)	25	Key stakeholders (women drug court participants, court staff, service providers)	New York (US)	Focus groups.	DTC: 19-58 Provider: 32-55 Staff: 30-52	DTC: 100% women Provider: 77.8% women, 22% men. Staff: 55.6% women, 37.5% men.	DTC: 62.5% White, 37.5% Black Provider: 22.2% Hispanic, 22.2% White, 55.6% Black Staff: 100% White	<b>Theme:</b> Substance Use Stigma for Women in Health Care	8
Otiashvili (2013)	89	Women who use drugs and service providers	Republic of Georgia	Secondary analysis of in-depth interviews.	PWUD: Range: 18-55 Mean: 35.7	PWUD: 100% women	PWUD: 100% Georgian	<b>Theme:</b> Substance Use Stigma for Women in Health Care; Societal Expectations of Womanhood <b>Code – Morality</b>	8
Davidson (2012)	47	People who inject drugs	Tijuana, Mexico	In-depth focus groups.	NR	NR	NR	<b>Theme:</b> Substance Use Stigma for Women in Health Care;	9

**Table 2.4:** A systematic review of qualitative studies investigating the intersection of gender and substance use stigma from the individual perspective (Continued) (*n* = 28).

<i>Target Manifestations of Stigma</i>									
First author (year)	Study characteristics			Participant characteristics			Themes	Quality Score	
	<i>n</i>	Population	Location	Method	Age	Gender			Race/Ethnicity
Chan (2010)	15	Women who had been pregnant in a methadone program & methadone clinic staff.	New Zealand	A mixed methods study with semi-structured interviews.	NR	100% women	NR	Societal Expectations of Womanhood Code – <b>Motherhood</b>	7
van Olphen (2009)	17	Women who had recently left jail.	San Francisco, CA (US)	Semi-structured interviews and focus groups.	Range: 22-43 Mean: 40	100% women	58.8% African American, 11.8% White, 11.8% Asian, 11.8% Mixed Race, 5.9% Native America	<b>Theme:</b> Substance Use Stigma for Women in Health Care <b>Theme:</b> Gender-Based Violence for WWUD	9
Razani (2007)	106	People who inject drugs & key informants	Tehran, Iran	Key informant interviews and focus group discussions.	Interview Range: 19-55 Mean: 36.5 Focus Group Range: 20-61 Mean:	Interviews: 7.6% women, 92.4% men Focus Groups: 100% women	NR	<b>Theme:</b> WWUD Experience "Double" Stigma	8



**Table 2.4:** A systematic review of qualitative studies investigating the intersection of gender and substance use stigma from the individual perspective (Continued) (*n* = 28).

<i>Target Manifestations of Stigma</i>									
First author (year)	Study characteristics			Participant characteristics			Themes	Quality Score	
	<i>n</i>	<i>Population</i>	<i>Location</i>	<i>Method</i>	<i>Age</i>	<i>Gender</i>			<i>Race/Ethnicity</i>
Bobrova (2006)	86	People who inject drugs	Volgograd & Barnaul, Russia	Semi-structured qualitative interviews.	Range: 16-44 Mean: 27	18.6% women, 91.4% men	NR	<b>Theme:</b> WWUD Experience "Double" Stigma	9
Copeland (1997)	32	Women who had recovered from alcohol or other drug problems.	Australia	Interviews with closed and open-ended questions.	Range: 21-77	100% women	94% Anglo-Saxon	<b>Themes:</b> WWUD Experience "Double" Stigma; Substance Use Stigma for Women in Health Care; Stereotypes of Promiscuity for WWUD; Societal Expectations of Womanhood <b>Code – Morality &amp; Motherhood</b>	6
Mora-Rios (2017)	35	People who use drugs, family members, and service providers	Mexico City, Mexico	In-depth interviews.	Family Range: 33-70 Provider Range: 27-59	54% women, 46% men.	NR	<b>Theme:</b> Gender-Based Violence for WWUD	8

**Table 2.4:** A systematic review of qualitative studies investigating the intersection of gender and substance use stigma from the individual perspective (Continued) (*n* = 28).

<i>Target Manifestations of Stigma</i>									
First author (year)	Study characteristics			Participant characteristics			Themes	Quality Score	
	<i>n</i>	Population	Location	Method	Age	Gender			Race/ Ethnicity
Lozano-Verduzco (2016)	13	Women who resided in a mutual-aid rehabilitation center	Mexico City, Mexico	Semi-structured interviews.	PWUD Range: 22-53	100% women	NR	<b>Theme:</b> Gender-Based Violence for WWUD; Stereotypes of Promiscuity for WWUD	8
Gunn (2016)	58	Young adult former Soviet Union (FSU) immigrants who reported recent opioid use, FSU mothers of opioid using youth, and service providers.	New York City, NY (US)	Semi-structured interviews and focus groups.	Young FSU: Range: 18-29 Mean: 23.3	Young FSU immigrants: 31% women, 69% men. FSU mothers of opioid using youth: 100% women. Service providers: 60% women, 40% men.	NR	<b>Themes:</b> WWUD Experience “Double” Stigma; Stereotypes of Promiscuity for WWUD; Societal Expectations of Womanhood <b>Codes – Morality &amp; Motherhood</b>	7
Haritavorn (2016)	30	Mothers who inject drugs.	Bangkok, Thailand	In-depth interviews.	Range: 20-47	100% women	NR	Societal Expectations of Womanhood <b>Code –Motherhood</b>	9

**Table 2.4:** A systematic review of qualitative studies investigating the intersection of gender and substance use stigma from the individual perspective (Continued) ( $n = 28$ ).

<i>Target Manifestations of Stigma</i>									
First author (year)	Study characteristics			Participant characteristics			Themes	Quality Score	
	<i>n</i>	<i>Population</i>	<i>Location</i>	<i>Method</i>	<i>Age</i>	<i>Gender</i>			<i>Race/Ethnicity</i>
Lawless (1996)	27	Women living with HIV	Sydney, Australia	In-depth interviews.	Range: 22-55	100% women	NR	<b>Theme:</b> Substance Use Stigma for Women in Health Care	7
Bungay (2011)	60	Women constructing crack smoking harm reduction kits & women with a self-reported history of crack use.	Downtown East Side neighborhood of Vancouver, Canada	Informal and in-depth interviews.	NR	100% women	NR	<b>Theme:</b> Gender-Based Violence for WWUD	9
Oliva (1999)	63	Women at high-risk for HIV	San Francisco, CA (US)	Focus group discussions.	Range: 21-47 Mean: 35	100% women	42% African American, 42% White, 10% Latina, 6% Other	<b>Theme:</b> Substance Use Stigma for Women in Health Care	7
Gunn (2015)	30	Women in residential drug treatment	Midwestern, US	In-depth interviews	Range: 19-56	100% women	62% African American, 24% Caucasian, 14% Latina	Societal Expectations of Womanhood <b>Codes – Morality &amp; Motherhood</b>	9
Krug (2015)	132	PWID	14 Countries	Community consultations	18-20: 37% 21-25: 48% 26-30: 15%	25.7% women, 73.5% men, & .8% transgender	NR	<b>Themes:</b> WWUD Experience “Double” Stigma	9

**Table 2.4:** A systematic review of qualitative studies investigating the intersection of gender and substance use stigma from the individual perspective (Continued) (*n* = 28).

<i>Target Manifestations of Stigma</i>									
First author (year)	Study characteristics			Participant characteristics			Themes	Quality Score	
	<i>n</i>	<i>Population</i>	<i>Location</i>	<i>Method</i>	<i>Age</i>	<i>Gender</i>			<i>Race/Ethnicity</i>
Earnshaw (2013)	12	MMT Patients	New Haven, CT (US)	Secondary qualitative analysis	Range: 22-52	33.3% women, 66.7% men.	83.3% White, 16.7% African American	<b>Theme:</b> Stereotypes of Promiscuity for WWUD	9

**Table 2.5:** A supplemental table of collected excerpts, organized by descriptive theme, from all included qualitative articles for a systematic review of the intersection of the gender- and substance use-related stigma ( $n = 35$ ).

<i>WWUD Experience “Double” Stigma</i>	
<b>First Author (year)</b>	<b>Article Excerpts</b>
King (2016)	“Key informants noted that it is may be extremely difficult for women to come to an organization that is labelled as being for people who inject drugs because of the high levels of stigma associated with being a woman who injects drugs.”
Orza (2015)	“Women who use drugs are subjected to double or sometimes triple stigma.”
Morse (2015)	“Participants also described laws that govern DTC policies and prevent women’s specific needs as mothers from being taken into account. Specifically for white, middle-class women. [there is] embarrassment over the diagnosis. Embarrassment ‘I got a DWI. I can’t drive anymore. I have to take a bus. It’s all beneath me. Clients have experienced...people treating them in a [negative] way...It’s to be expected...You use drugs... You’re lower income...Your children have these other issues...Sometimes... some of that stigma and shame do come in.”
Spooner (2015)	“The stigma associated with drug use was reported to be worse for women than for men. Shame was a significant issue for the women and they dealt with this by isolating themselves from broader society. The women’s boyfriend and small group constituted the entire social world for many of these women.”
Razani (2007)	“It is of note that there was a high no-show rate for female interviewees (approximately half those scheduled were interviewed). Six female heroin users were interviewed, five of whom injected. After several attempts, we were not successful in recruiting a female-only focus group. Based on our ongoing key informant interviews and secondary data review, we came to the conclusion that it was inappropriate to pursue a female focus group given the high level of stigma attributed to female drug users, and the desire for confidentiality expressed by the women we interviewed.”
Bobrova (2006)	“Although it was not mentioned frequently, some barriers were related to gender, including the double stigma surrounding female IDUs; time lost to work; and time away from family.”
Copeland (1997)	“When asked whether they felt society looked down more on women or men with alcohol and other drug problems, 78% felt that women were more looked down upon.”
Gunn (2016)	“The narratives of young female participants reveal their perceptions that FSU women who use drugs face especially harsh stigma.”
Krug (2015)	“The two female-only consultations held in Nepal and Nigeria, as well as the mixed-group consultations, provided insights into how the needs of females differ. Young women are less likely to be in contact with services and are more concerned about their drug use being exposed.”

**Table 2.5:** A supplemental table of collected excerpts, organized by descriptive theme, from all included qualitative articles for a systematic review of the intersection of the gender- and substance use-related stigma (Continued) (*n* = 35).

<i>WWUD Experience “Double” Stigma</i>	
<b>First Author (year)</b>	<b>Article Excerpts</b>
Myers (2016)	“Gender role expectations about what it means to be a woman also result in young women who use AODs experiencing more stigma than young men.”
<i>Alternative Accounts from Men Who Use Drugs</i>	
Chandler (2014)	“In contrast, while men in the study described using benzodiazepines for similar reasons [as women], their accounts indicated that this was seen as problematic. One participant framed this as explicitly related to gender: I’ve got all these people, telling me what’s right, and what’s wrong, and I take Valium now and again, so, therefore, I’m not a good parent. How many bloody mothers out there, do you ken that take Valium? Does that stop them from being good parents [...]? Where’s their just cause [...]? Where’s the argument, like, because I chose to be on Valium when I was young, he must be f***ed up. To me, I would like to think I’m reasonably intelligent. But, fae their angle, I’m no’, they must think I’m a total madman, which I’m no’.”
<i>Societal Expectations of Womanhood – Morality</i>	
Myers (2009)	“For example, almost all respondents suggested that HDCs believe ‘these are good women gone bad’ and that ‘when a woman drinks then her morals slide out the window.’ For female ‘addicts’, these discourses are defined against commonly-held discourses about what it means to be a ‘good woman.’”
Beckerleg (2008)	“Concern has been expressed in a number of khat—consuming countries that, what was traditionally a male activity is also attracting a growing number of women users. This trend is viewed with alarm, as it is associated with a loosening of moral mores and values” (United Nations Office on Drugs and Crime [UNODC], undated).”
Otiashvili (2013)	“As indicated by the respondents in the service providers’ group, substance use is viewed as a serious deviation from these traditional societal norms. This often results in substance-using women being characterized as morally weak, irresponsible, and negligent.”
Copeland (1997)	“The notion of double deviance was often mentioned, in that women are looked down upon anyway and even more so when they have a problem that encompasses lack of moral and social restraint with overtones of sexual promiscuity and poor maternal instincts. Although substance dependence is inherently stigmatising, the additional stigma perceived by women was often noted to have negatively affected their willingness to seek treatment from specialist alcohol and other drug services.”

**Table 2.5:** A supplemental table of collected excerpts, organized by descriptive theme, from all included qualitative articles for a systematic review of the intersection of the gender- and substance use-related stigma (Continued) ( $n = 35$ ).

<b><i>Societal Expectations of Womanhood – Morality</i></b>	
<b>First Author (year)</b>	<b>Article Excerpts</b>
Gunn (2016)	“According to Tatiana, the FSU community attributes stigmatizing beliefs of moral weakness to all who use drugs. However, because traditional, patriarchal Russian gender norms dictate that women should exhibit greater moral rectitude than men and temper men’s reckless tendencies (Leipzig, 2006), their drug use is seen as more deviant and shameful. Moreover, as Tatiana intimates, female drug use is associated with sexual promiscuity and sex work; therefore, women who use drugs are seen as violating normative expectations of sexual purity for women.”
Gunn (2015)	“The women perceive stigmas based on what their substance use signifies about their womanhood, moral character, and value as mothers... In her family, mothers with substance use problems are looked down upon because they violate gendered norms of appropriate behavior. A woman who commits crime, particularly against family, violates the ideals of womanhood; “good women” are nurturers and the moral compass of their families. Valencia’s quote illuminates how stereotypes attached to being a “bad woman” intersect with stereotypes attached to being “an addict” to communicate multiple stigmas.”
<b><i>Societal Expectations of Womanhood – Women’s Cleanliness &amp; Attractiveness</i></b>	
McKenna (2011)	“Women’s use of amphetamine to meet a gendered ideal is juxtaposed with some of the drug’s other effects that are less socially desirable for women (Grinspoon & Hedblom, 1975). The historical link between controlled amphetamine use and female perfection is explicitly defined in the opening scene of the film <i>The Salton Sea</i> . In this same scene, the increased aggression and sexual desire associated with meth are alluded to as undesirable for women.”
Laudet (1999)	“With the exception of 2 men who felt there was no difference between a man and a woman using drugs, the remaining subjects unanimously expressed a more negative opinion of women using drugs. Those views seem to rest on the perceived differences in drug procurement methods and on the consequences of drug use for women and men... Several subjects stated that they would not go out with a woman who uses drugs, particularly crack, because all such women engage in commercial sex, which is seen as the lowest of the low, especially if it is suspected the woman has children at home. In their view, the first problem is that women who use drugs do not take care of themselves (they neglect hygiene, pay less attention to appearance), thus becoming less attractive in men’s eyes.”
King (2016)	“Men who inject drugs said that the women in their social networks who use drugs are often not viewed as women anymore.”

**Table 2.5:** A supplemental table of collected excerpts, organized by descriptive theme, from all included qualitative articles for a systematic review of the intersection of the gender- and substance use-related stigma (Continued) ( $n = 35$ ).

<b><i>Societal Expectations of Womanhood – Motherhood</i></b>	
<b>First Author (year)</b>	<b>Article Excerpts</b>
Deng (2007)	“A clear message from the focus-group interviews was that Dai women were overburdened with field work, housework and care for the family, and did not have time to get together with friends. Hence heroin could not be shared among women. Secondly, the duty of care for the family was so strongly instilled in Dai women that they could not bear the thought of drug abuse, which would both physically and financially disable them from fulfilling their female roles. Furthermore, male drug abusers were already looked down upon, and a female drug user would be looked down even more.”
Laudet (1999)	“With the exception of 2 men who felt there was no difference between a man and a woman using drugs, the remaining subjects unanimously expressed a more negative opinion of women using drugs. Those views seem to rest on the perceived differences in drug procurement methods and on the consequences of drug use for women and men... Several subjects stated that they would not go out with a woman who uses drugs, particularly crack, because all such women engage in commercial sex, which is seen as the lowest of the low, especially if it is suspected the woman has children at home.”
Benoit (2015)	“Parents described profound stigmatization around substance use for mothers, especially when children are removed from their care. Most mothers judged themselves for any substance use in pregnancy or early parenting, and expressed their sense of guilt regardless of relative harm or circumstance.”
Davidson (2012)	“Even if the pharmacy staff identify the woman as a drug user, her identity as the mother of a sick child may serve to override the drug user classification. Altering the narrative in this way also capitalizes on the pharmacy’s need to be seen to serve the community by providing critical medical services to the legitimately ill.”
Copeland (1997)	“The notion of double deviance was often mentioned, in that women are looked down upon anyway and even more so when they have a problem that encompasses lack of moral and social restraint with overtones of sexual promiscuity and poor maternal instincts. Although substance dependence is inherently stigmatising, the additional stigma perceived by women was often noted to have negatively affected their willingness to seek treatment from specialist alcohol and other drug services.”
Gunn (2016)	“Female drug use also violates role expectations of caretaking and selflessness associated with proper motherhood.”



**Table 2.5:** A supplemental table of collected excerpts, organized by descriptive theme, from all included qualitative articles for a systematic review of the intersection of the gender- and substance use-related stigma (Continued) ( $n = 35$ ).

<b><i>Societal Expectations of Womanhood – Motherhood</i></b>	
<b>First Author (year)</b>	<b>Article Excerpts</b>
Haritavorn (2016)	“Even though all the pregnancies were unplanned, the women all tried to perform their maternal roles. They had dreamt of being ‘good’ mothers and hoped that they could stop using drugs for the sake of their children. The women recognised the Thai cultural expectation that once they became a mother, they should take responsibility. They knew that they would be expected to put their efforts into performing the role of mothers like other mothers. Jarawan talked about joining Mother’s Day at her daughter’s primary school: ‘I was not a good mother and not a good role model for her. The least I could do for her was try my best to be a mother and not khee yaa (drug addict) in front of others. I joined the school ceremonies especially on Mother’s Day. On Mother’s Day I went to the methadone clinic early and waited for the clinic to open. After taking methadone, I rushed to her school.’ Many of the women spoke of their fear of disclosure of their drug addiction, which they felt might harm their children and destroy trust. They tried to conceal their stigmatised identities so as to protect themselves and their children. The mothers feared the consequences if their children inadvertently revealed the secret of their drug use to others.”
Gunn (2015)	“The women perceive stigmas based on what their substance use signifies about their womanhood, moral character, and value as mothers. Even though Sheryl’s sibling drinks alcohol excessively, Sheryl is the more problematic drug user because she lost custody of her children. Moreover, her intersecting “harder” drug use and parenting challenges violate societal expectations for mothers.”
<b><i>Stereotypes of Promiscuity/Sex Work</i></b>	
Beckerleg (2008)	“Condemnatory attitudes concerning the propriety of women using khat, combined with fears about a possible breakdown in women’s sexual conduct, are typical of Somali men in Kenya.”
Laudet (1999)	“With the exception of 2 men who felt there was no difference between a man and a woman using drugs, the remaining subjects unanimously expressed a more negative opinion of women using drugs. Those views seem to rest on the perceived differences in drug procurement methods and on the consequences of drug use for women and men... Several subjects stated that they would not go out with a woman who uses drugs, particularly crack, because all such women engage in commercial sex, which is seen as the lowest of the low, especially if it is suspected the woman has children at home.”

**Table 2.5:** A supplemental table of collected excerpts, organized by descriptive theme, from all included qualitative articles for a systematic review of the intersection of the gender- and substance use-related stigma (Continued) ( $n = 35$ ).

<b><i>Stereotypes of Promiscuity/Sex Work</i></b>	
<b>First Author (year)</b>	<b>Article Excerpts</b>
Jessell (2015)	“Some male participants indicated a belief that individuals, especially females who are drug dependent, do not deserve sexual respect, and some participants referred to female drug users in sexually demeaning terms. Thirty percent of participants reported having been sexually insulted about their drug use, and this was especially common among females. Of the female participants, 61% reported having been sexually insulted at least once, whereas 14% of males reported the same.”
Copeland (1997)	“The notion of double deviance was often mentioned, in that women are looked down upon anyway and even more so when they have a problem that encompasses lack of moral and social restraint with overtones of sexual promiscuity and poor maternal instincts. Although substance dependence is inherently stigmatising, the additional stigma perceived by women was often noted to have negatively affected their willingness to seek treatment from specialist alcohol and other drug services.”
Lozano-Verduzco (2016)	“Participants identify actions and discourses that stigmatize them: they show that women’s expression of emotions are understood as a crisis and problematic for traditional psychiatry, that their substance use constructs them as sexual objects rather than human subjects, and feel minimized by men when they drank.”
Gunn (2016)	“The narratives of young female participants reveal their perceptions that FSU women who use drugs face especially harsh stigma. Tatiana, a heroin user from Kyiv, attested that: ‘I think [there is] definitely more [stigma] in the Russian community. You are seen as a weak individual...But I think you’re judged a lot more harshly being a female because. . . you’re supposed to be the one telling the guy, “What are you doing?” . . . And it’s like always they automatically assume, “Oh, are you sleeping for it?”’
Earnshaw (2013)	“One participant noted that female employees with a history of drug addiction are often stereotyped by male employers as prostitutes. She stated: ‘It’s like men employers... the managers are sleaze bags. Like, they try to get with you. You know they know you’re a drug addict, they know you’re in a program, you may not have money... So it’s like they characterize you, you know ‘cause you’re a drug addict or you’re a prostitute or whatever the case may be.’”

**Table 2.5:** A supplemental table of collected excerpts, organized by descriptive theme, from all included qualitative articles for a systematic review of the intersection of the gender- and substance use-related stigma (Continued) ( $n = 35$ ).

<b><i>Substance Use Stigma for Women in Healthcare – Interpersonal Perspective</i></b>	
<b>First Author (year)</b>	<b>Article Excerpts</b>
Fielder (2005)	“However, she also stipulated situations in which it would be appropriate for HIV testing to be a mandatory law. E.X., in addition to the others in all of the focus groups, agreed that certain groups, such as women with high-risk lifestyles (commercial sex workers and active, heavy drug users) may not have the capacity to make such a decision, therefore making it necessary to institute mandatory testing, in those special circumstances. Both genders, however, were able to cite various reasons that other women might avoid prenatal care, including high-risk lifestyles such as drug addiction. Other reasons included being a commercial sex worker, fear of stigmatization by society and from healthcare providers. Participants felt that women with high-risk behaviors (including addiction and prostitution) would not have sufficient control over their actions to make an appropriate decision for testing.”
Greenfield (2014)	“Three interviewees said that women with opioid use disorders are an underserved population. One stated, ‘Residential treatment for women is viewed as extravagant.’”
Myers (2016)	“This exclusion of young women who use AODs from the policy environment has contributed to the lack of women-specific AOD services, largely because these kinds of services were not seen as a policy or funding priority.”
Orza (2015)	[Excerpt on discussion of intersectional stigma/stigma for WWUD] “Women who use drugs are subjected to double or sometimes triple stigma. There are cases of discrimination against these women, even in [the] HIV service organizations in which they work” (participant from the Ukraine)
Davidson (2012)	“Even if the pharmacy staff identify the woman as a drug user, her identity as the mother of a sick child may serve to override the drug user classification. Altering the narrative in this way also capitalizes on the pharmacy’s need to be seen to serve the community by providing critical medical services to the legitimately ill.”
<b><i>Substance Use Stigma for Women in Healthcare – Individual Perspective</i></b>	
Howard (2015)	“The majority of the women in the study reported that they did not receive options to withdraw from methadone from their health care providers. Moreover, they did not feel they had a choice to do other than what was recommended because they feared the involvement of CPS, they were concerned about barriers to care, and they feared harm to their unborn baby. Half of the participants reported being told by their methadone providers or obstetricians that they would harm or kill their baby if they discontinued their use outside of an ORT.”

**Table 2.5:** A supplemental table of collected excerpts, organized by descriptive theme, from all included qualitative articles for a systematic review of the intersection of the gender- and substance use-related stigma (Continued) ( $n = 35$ ).

<i>Substance Use Stigma for Women in Healthcare – Interpersonal Perspective</i>	
<b>First Author (year)</b>	<b>Article Excerpts</b>
Spooner (2015)	“The women in the study reported reluctance to access injecting equipment from outreach workers as they experienced shame from doing so.”
Morse (2014)	“Interpersonal stigma from medical providers eroded relatedness and autonomy as women lacked trust in their providers and had little control over their healthcare: ‘I had a tough pregnancy...I had toxemia, preeclampsia, gestational diabetes, fluid retention, 40 pounds in two days...I kept going back and forth...[to]emergency, they'd send me home...because they did a tox screen on me early in my pregnancy. I came out positive for cocaine. Finally...I was in full blown congestive heart failure...Myself and my child were literally minutes away from death...my gynecologist...admitted that they were concerned about my drug use and not about my health...They also told me I was positive for cocaine... They didn't ask to...have my daughter walk out of the room... she was 10.’”
Otiashvili (2013)	“A woman can feel guilty and ashamed of her behavior and in turn can be reluctant to disclose substance use to family members, friends, and even more so to individuals outside the family, including health care providers.”
Chan (2010)	“Although not a focus of this study, clinical records that were reviewed during audit revealed that neither the antenatal clinic nor the methadone clinic held full information about the drug use, pregnancy history, occupation and social history. The women confirmed self-judgment and low self-worth: ‘It’s just me who does this to myself. I choose to use and so I always feel like I deserve to be looked down upon by these doctors and nurses.’ In particular, antenatal clinic staff commented that pregnant women on methadone take more time than their average patient, are less receptive, and exhibit ‘lack of compliance’ and ‘frequent missing of appointments.’”
Copeland (1997)	“The notion of double deviance was often mentioned, in that women are looked down upon anyway and even more so when they have a problem that encompasses lack of moral and social restraint with overtones of sexual promiscuity and poor maternal instincts. Although substance dependence is inherently stigmatising, the additional stigma perceived by women was often noted to have negatively affected their willingness to seek treatment from specialist alcohol and other drug services.”

**Table 2.5:** A supplemental table of collected excerpts, organized by descriptive theme, from all included qualitative articles for a systematic review of the intersection of the gender- and substance use-related stigma (Continued) (*n* = 35).

<i>Substance Use Stigma for Women in Healthcare – Interpersonal Perspective</i>	
<b>First Author (year)</b>	<b>Article Excerpts</b>
Lawless (1996)	<p>“The consequences for women who are known to have a history of illicit drug use or professional sex work are multi-layered. As indicated in the following quote, women with a history of drug use, sex work or assumed to be promiscuous may experience great difficulty in accessing appropriate medical care, support and services that are nonjudgmental: ‘that discrimination [related to known history of drug use] you know, when I was in incredible pain with PID [pelvic inflammatory disease], they were giving me Panadol, because methadone would be plenty, I had to ring my own doctor and her sort of going behind my ward doctor's back getting her to say, look this girl needs morphine, she's actually in a lot of pain, and arguing about me lacing a user and--I try to convince doctors that you don't go to that much trouble and effort to get drugs. A hospital is not where you would go, if you were gonna get drugs as a user. You're there for health care, so yea, it's discrimination against users...’”</p>
Oliva (1999)	<p>“Many drug-using women reported negative experiences with medical providers and only sought health care when they were so ill they had no choice. The women generally felt that medical personnel were hostile and did not take their problems seriously. One woman stated: ‘I went in and was having real bad pains inside, in my stomach and in my cervix, and I couldn't walk... And when they seen tracks on my arms, doctors were saying... it's her imagination. She's on drugs. And then the female doctor came in and said no this is an emergency. My temperature was 105, and they found out I had disseminated gonorrhoea. That it went through my whole body, and they kept me in the hospital for a couple weeks.’ Many women reported feeling pain and discomfort during vaginal exams because doctors used the wrong size speculum or conducted the exam in a rough or rushed fashion. Others reported that providers refused to provide care once they learned of their drug use: ‘With the pregnancy of this baby I did not tell the doctor that I was a drug user. At the end, just before delivery, I told him that I'm on methadone... he dropped me from his caseload! ...He says, well, if you have the baby... we don't know anything about methadone and if we give you something it could jeopardize my position as a doctor. I said, what am I gonna do now about healthcare?’”</p>

**Table 2.5:** A supplemental table of collected excerpts, organized by descriptive theme, from all included qualitative articles for a systematic review of the intersection of the gender- and substance use-related stigma (Continued) ( $n = 35$ ).

<i>Gender-Based Violence for WWUD</i>	
<b>First Author (year)</b>	<b>Article Excerpts</b>
McNeil (2015)	“Some women articulated how pipe-sharing was framed by everyday violence in emphasizing how they were “forced” to share drugs and crack pipes by men threatening them with violence in unregulated drug use settings. Among our participants, the consequences of gender-based violence were severe, with multiple women arriving at VANDU seeking support after having been physically assaulted when smoking crack in nearby alleyways.”
Olphen (2009)	“Sometimes, the challenges women faced in getting a legitimate job that pays a living wage forced them to choose between unpalatable options – for example, sex work or selling drugs: ‘I’m a convicted felon, I’m not eligible for other things. Like I’m a drug addict. I’m not eligible for Proposition 36 (Appendix) because I sold dope. Well, to me, prostituting was too demeaning and I was raped too many times, so I stopped doing it. Right? So I started selling drugs. I’m still a drug addict. It’s not like I sold drugs to become a rich person or anything. I sold drugs to pay my rent. I paid it. I lived in a room that was \$50 a day, which was \$1,500 a month.’”
Mora-Rios (2017)	“In addition to the structural factors already described, gender and culture also affect the stigmatization process. Female substance users are usually the object of greater social rejection. One informant described having been sedated by family members and forced to sign away her inheritance. Another related her alcohol abuse to depression caused by her partner’s violence, which led her to attempt suicide and resulted in hospitalization.”
Lozano-Verduzco (2016)	“The increase in use and abuse of any substance made it more likely for women to suffer from gender violence once again. Participants reported that their male partner would threaten, blackmail, beat, minimize, insult and/or yell at them, using their substance abuse as a form of discrimination and stigma. Women were victims of different forms of violence at the hands of men: structural gender violence expressed in phrases such as “women are for fucking”, to direct physical and sexual violence when acting “out of order” or simply because male residents and sponsors saw them as sexual objects, or subhuman because they abused substances.”
Bungay (2011)	“Although crack use was identified as a ‘health management strategy’, there were many negative health consequences associated with crack use that reflected complex intersections between the physiological effects of crack, smoking rituals and practices, gendered relations of power, and the structural inequities in harm reduction and social service programming and law enforcement. Women’s safety was influenced not only by gendered relations of power, but also due to intersections between policing practices, unstable housing, and the lack of women-only safe spaces: ‘Participant (001): Guys are preying us girls in the alleys...this girlfriend of mine was in the alley smoking. Like all of us, she didn’t want the hassle of the cops. Two guys came up and tried to rape her; right in the open. She said that if a car hadn’t driven by and got them to turn around and she bolted, they would have raped her.’”

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### CHAPTER 3: EXAMINING THE GENDER COMPOSITION OF DRUG INJECTING INITIATION EVENTS: A MIXED METHODS INVESTIGATION OF THREE NORTH AMERICAN CONTEXTS

#### ABSTRACT

**Background:** Gender influences the health and social risks faced by individuals initiating drug injecting. Using mixed-methods across three North American contexts, we investigated the gender composition of injection initiation events, and the gendered risk environments in which these events occurred.

**Methods:** The *Preventing Injecting by Modifying Existing Responses* (PRIMER) study pooled data from three prospective community-recruited cohorts of people who inject drugs (PWID) in San Diego, USA, Vancouver, Canada, and Tijuana, Mexico. A qualitative subsample provided narrative data on their experiences of, and the contexts for, injection initiation events. Guided by Rhodes' risk environment framework, we examined the gender composition of initiation events stratified by city, and analyzed qualitative data using abductive thematic analyses.

**Results:** Among 2,622 PWID (Tijuana:  $n = 531$ ; San Diego:  $n = 352$ ; Vancouver:  $n = 1,739$ ), 112 (4.3%) reported recently providing initiation assistance to injection-naïve individuals in the previous six months. The proportion of gender concordant (e.g., male-male) initiation pairs varied, ( $\chi^2 = 10.32$ ,  $p = <0.001$ ) with greater than expected concordance among pairs in Tijuana compared with those in Vancouver or San Diego. Sixty-one interviews provided context for the discrepancy across sites by highlighting the gendered injection initiation risk environments of prison/jail detention in Tijuana, intimate partnerships in San Diego, and overdose risk in Vancouver.

**Conclusions:** These results highlight how gender influences injection initiation events within spatial, social, and economic risk environments, and how this influence varies across geocultural settings. These findings can inform interventions to reduce the risk of injection initiation and related harms.



## **BACKGROUND**

The opioid overdose crisis is a pressing public health concern across North America.<sup>1</sup> In 2018 there were 67,367 overdose deaths, representing 20.7 deaths per 100,000.<sup>2</sup> Similarly, in British Columbia, Canada, there were 20.7 deaths per 100,000 in 2019 related to opioid overdose alone.<sup>3,4</sup> In Mexico, according to the most recent available data, there were 378 overdose deaths reported in Mexico for the 2015-2016.<sup>5,6</sup> However, northern Mexico, including Tijuana, has since reported higher rates of heroin use, 14 confirmed overdose deaths in 2011-2018,<sup>7</sup> and increasing contamination of the heroin supply with fentanyl.<sup>8</sup> Injection drug use (IDU) has been identified as key risk factor for overdose, especially given the availability of high potency synthetic opioids, like fentanyl, in North America.<sup>9,10</sup> Given the elevated overdose risks faced by people who inject drugs (PWID) residing in the United States, northern regions of Mexico, and Canada, and the importance of regional contexts in understanding harms related to the opioid overdose epidemic,<sup>11</sup> comparative research across these settings is needed.

PWID are also disproportionately affected by infections such as HIV and Hepatitis C (HCV) and are at greatest risk of infection within the first three years of initiating IDU.<sup>12,13</sup> This could be due, in part, to the reliance of novice PWID on more experienced PWID to help them learn the skills necessary to inject, their sharing of drug preparation equipment with those PWID assisting them, and the vulnerability of novice PWID, particularly marginalized women, to punitive policing and policies related to IDU,<sup>12-15</sup> and the vulnerability of women to intimate partner violence within injection-related relationships.<sup>16,17</sup> Given that novice PWID are particularly vulnerable to IDU-related harms in the few years following initiation, experts have recommended focusing prevention efforts upstream, towards the prevention of transitions to drug injecting.<sup>18-20</sup>

## **Transitions into injection drug use**

PWID play an important role in IDU initiation processes, with 74-100% of PWID reporting receiving guidance, education, and/or physical assistance from more experienced PWID during their transition into drug injecting.<sup>20-23</sup> PWID are provided IDU initiation assistance from a variety of people including casual acquaintances, intimate partners, friends, relatives, and strangers.<sup>24</sup> Furthermore, data indicate that gender shapes these relationships, with women who inject drugs (WWID) being more likely to have been assisted in initiation by a male sexual partner/spouse and men who inject drugs (MWID) more likely to have been assisted by a casual acquaintance.<sup>25-27</sup> A global investigation of gendered IDU risk has found that women were also more likely to report continued dependence on their intimate partner for IDU assistance after initiation and difficulty in obtaining sterile injection equipment.<sup>28</sup> Despite the identification of these global gendered risks, differential risk based on gender in IDU initiation processes are also context-specific.<sup>29</sup> For example, among a sample of PWID in Tijuana, Mexico, men were found to be significantly more likely to have provided IDU initiation assistance compared to women, though this association was not found among PWID in San Diego, USA or Vancouver, Canada.<sup>29</sup>

## **Gendered power dynamics in injection drug use initiation events**

Additionally, scientific literature across contexts has illustrated how gendered power dynamics shape injection initiation processes. For example, an investigation of gender dynamics within PWID heterosexual intimate partnerships in New York revealed that reasons for providing IDU initiation assistance included the desire of men and women to share the drug use experience and pleasure with their partner, to increase intimacy and/or relationship satisfaction, and to

counteract a partner's increasing tolerance and/or the economic cost of drug use.<sup>17,27</sup> Qualitative narratives from studies in New York, USA and Leeds, United Kingdom have also highlighted IDU initiation experiences during which women were coerced or forced to inject, through both the economic pressures of substance use and, more rarely, through violence.<sup>17,30</sup> These accounts of forced or coerced initiation of women suggest unique gendered emotional and physical vulnerability to IDU initiation, though it is noteworthy that other accounts also demonstrate women's active pursuit of being initiated into IDU.<sup>31,32</sup> In general, however, it has been observed that there is a lack of research focusing on the gender-specific risks surrounding the process of IDU initiation,<sup>33,34</sup> and a concomitant need for conceptually-driven investigations of the gendered contexts and pathways of entry into drug injecting.<sup>24</sup>

### **IDU risk in the San Diego, USA-Tijuana, Mexico binational region**

The San Diego-Tijuana region is a key node along a drug trafficking corridor that supplies methamphetamine, heroin, and cocaine,<sup>35,36</sup> from Mexico to the United States and up into Canada.<sup>37-39</sup> The cities of San Diego, USA and Tijuana, Mexico form an international, metropolitan region that is home to a large binational population of PWID that have been found to have elevated HIV and HCV prevalence<sup>40,41</sup> and high-risk IDU behaviors.<sup>41-44</sup> Furthermore, interviews with PWID in San Diego revealed that a little over a quarter of the sample had traveled to Mexico to inject drugs, and that distributive needle sharing was positively associated with cross-border IDU.<sup>44</sup> This context is one in which high risk behaviors and high levels of mobility are increasing risk of infection and overdose mortality for PWID, and further research is needed to understand the gendered risk environments that are productive of IDU initiation events within this region.

## **The context of IDU risk in Vancouver, Canada**

Canada has recently experienced an increase in drug supply adulteration which places PWID at increased risk of overdose death in this context.<sup>45</sup> For example, fentanyl and fentanyl-related analogues were found in 78% of the nearly 3,000 overdose deaths recorded for 2019.<sup>3</sup> Vancouver is the city most disproportionately affected by IDU-related morbidity and mortality in Canada. In response, Vancouver has implemented various harm reduction strategies, including multiple supervised injection facilities (SIFs) and overdose prevention sites.<sup>46,47</sup> Notably, Vancouver also has a women-only SIF, SisterSpace, that provides a harm reduction space in which women feel safe from the gendered stigma and violence they may encounter in other mixed-gender harm reduction services.<sup>48</sup> Given this convergence of the opioid overdose epidemic and harm reduction strategies in Vancouver, it is important to understand how gender shapes experiences with IDU initiation in this context so that tailored prevention and harm reduction efforts can be developed. As such, Vancouver, Canada is an important sociocultural context in which to better understand the influence of gendered risk environments on IDU initiation processes.

## **The current study**

The purpose of this mixed methods study is to characterize the gendered context for, and experiences of PWID in, transitions from non-IDU to IDU within contexts disproportionately impacted by IDU and related harms. More specifically, this paper seeks to further understand the influence of the gender of IDU initiation pairs (i.e., PWID assisters and IDU-naïve assistees) and how this is influenced by the risk environments in which they operate. This study has two chief aims: (1) to compare the gender composition of the population participating in IDU initiation across three North American contexts; San Diego, USA, Tijuana, Mexico, and Vancouver,

Canada, and (2) to explore the gendered risk environments in which IDU initiation events occur across these contexts.

## **METHODS**

### **Study Characteristics**

The current study was conducted as an extension of the *PReventing Injecting by Modifying Existing Responses* (PRIMER) study, a multi-cohort study seeking to investigate whether interventions to reduce HIV risk among PWID may be effective in preventing the initiation of others into IDU.<sup>22</sup> PRIMER study methods have been previously described in full.<sup>22</sup> Briefly, PRIMER includes quantitative data pooled beginning in August 2014 and qualitative beginning in September 2016 from existing prospective community-recruited open cohort studies of PWID including the *Study of Tuberculosis, AIDS, and Hepatitis C Risk* (STAHR II) cohort (San Diego, USA), the *Proyecto El Cuete IV* (ECIV) cohort (Tijuana, Mexico), and the linked *Vancouver Drug Users Study* (VDUS)/*AIDS Care Cohort to evaluate Exposure to Survival Services* (ACCESS) cohorts (Vancouver, Canada). All of these cohort studies sought to investigate HIV risk behaviors among PWID living in urban settings, and ECIV and STAHR II were specifically designed as a linked binational study mechanism with survey items that are highly comparable.<sup>42</sup> PRIMER questionnaires collected data on the involvement of PWID in providing IDU initiation assistance, including participants' experiences providing IDU initiation assistance to others and the characteristics of the people they provided IDU initiation assistance to. With respect to the present study, which sought to provide a granular-level analysis of the gendered context for, and experiences of PWID in, transitions from non-IDU to IDU, eligibility was restricted to individuals who reported IDU in the 30 days prior to baseline, were a resident

of their respective city and planned to remain in the area for at least 24 months, and were fluent in either English or Spanish.

Additionally, based on quantitative reports of providing IDU initiation assistance, opioid agonist treatment (OAT) enrollment, and a history of incarceration, a purposive sample of participants that met the aforementioned PRIMER inclusion criteria was recruited for semi-structured PRIMER qualitative interviews in San Diego, USA (STHR II), Tijuana, Mexico (ECIV), and Vancouver, Canada (VDUS/ACCESS). To identify the unique social norms and stigmas associated with helping others to inject, a sub-sample of participants who did not report assisting others was also included in STHR II and ECIV qualitative samples. All participants gave informed consent and received USD\$25 (CAD\$30 in Vancouver) compensation for their time and travel costs for the quantitative interviews and USD\$25 (CAD\$30 in Vancouver) for the qualitative interviews. PRIMER, STHR II and ECIV received approval from the University of California, San Diego Institutional Review Board (IRB) and VDUS/ACCESS received approval from the Research Ethics Board of the University of British Columbia and Providence Health Care. ECIV also received approval from the Universidad Xochicalco Ethics Committee.

### **Quantitative Measures**

Composite variables were created to construct the outcomes of interest: the gender composition of IDU initiation pairs reported by PWID participants and whether their participation in an IDU initiation pair was gender concordant (i.e., both the PWID participant [i.e., the ‘assister’] and the person to whom they provided IDU initiation assistance [i.e., the assistee] were of the same gender). This was done using a three-stage process. First, PWID participants were asked, “In the past six months, have you helped someone to inject who had never injected before?” If they endorsed the item, they were asked to indicate the gender(s) of

those they provided assistance to. The response options for this item were: male, female, and transgender, and participants were allowed to endorse more than one option given that they could have assisted multiple individuals in the past six months. Second, from this variable and from the self-reported gender of the participant, the gender composition of the pair participating in the initiation event was assessed, and the composite variable was created with the following categories: male assister and male assistee(s) (MM), male assister and female assistee(s) (MF), male assister and mixed gender assistees (MX), female assister and female assistee(s) (FF), female assister and male assistee(s) (FM), and female assister and mixed gender assistees (FX). Third, if the gender of the assister and the assistee were the same (i.e., MM or FF), the pair was designated as gender-concordant; conversely, if the genders of the pair were different (i.e., MF, MX, FM, or FX), the pair was designated as gender-discordant. Though the broader samples contained transgender individuals, none reported providing IDU initiation assistance in the past six months. The independent variable of interest for this analysis was defined as the site of participant recruitment (i.e., whether participants were from San Diego, Tijuana, or Vancouver).

### **Qualitative Data Collection**

Qualitative interviews were initially undertaken as part of the PRIMER protocol.<sup>22</sup> These in-depth qualitative interviews included open-ended questions and prompts to explore the relationships and contexts that influenced individuals' own, and their participation in others', IDU initiation events, as well as the perceived social norms and contexts that shaped their decisions to assist others. Data presented in this chapter were extracted from these interviews and focus on participants' involvement in others' IDU initiation events to inform the quantitative data on participants' provision of IDU initiation assistance. The qualitative interviews collected data on a range of topics related to the process of IDU initiation; this chapter will, however,

focus on the gendered themes that emerged in participants' accounts of providing IDU initiation assistance.

All interviews were conducted by social science researchers with previous qualitative research experience with communities of people who use drugs. The interviews took place in offices that were familiar to study participants in either San Diego for STAHR II participants, Tijuana for ECIV participants, or Vancouver for VDUS/ACCESS participants. Interviewers explored these questions while allowing participants to elaborate on topics in their own words. Additionally, interviewers did not probe further on interview topics if verbal or non-verbal cues indicated an unwillingness to discuss the subjects raised or if contradictions emerged in their accounts. The interviews lasted an hour, on average, but ranged from 20 to 90 minutes in length. All interviews were transcribed and translated to English when needed. All names presented herein are pseudonyms to preserve participant confidentiality.

## **Analyses**

The present secondary analysis used an explanatory sequential mixed-methods design (QUAN → qual), in which an initial quantitative analysis phase informed, and was followed by, a second qualitative analysis phase.<sup>49</sup> This second qualitative phase sought to further explore the findings of the initial quantitative phase using data from previously conducted qualitative interviews. Data from both the quantitative and qualitative analyses were then subsequently integrated to evaluate the gender composition of pairs participating in IDU initiation events and the contexts in which they operate. This study did so to establish complementarity through the use of different methods to address different parts of the phenomenon of interest – specifically, the gendered contexts for the provision of IDU initiation assistance.<sup>50</sup>



## **Quantitative Analysis**

Descriptive statistics were generated for all variables of interest across the STAHR II, ECIV, and VDUS/ACCESS cohorts separately, as well as for the pooled sample combining the three cohorts. The analysis of a range of independent variables of interest was limited given low statistical power as a result of the rarity of participants reporting providing IDU initiation assistance. Chi-square analyses and Fisher's exact tests were conducted assessing the relationship between cohort location (i.e., San Diego, Tijuana, or Vancouver) and IDU initiation pair type, as well as between cohort location and gender concordance. All quantitative analyses were conducted with SAS ® OnDemand for Academics software, Copyright © 2015.

## **Qualitative Analysis**

All the in-depth qualitative interviews were originally coded and analyzed thematically by a team of social scientists as part of PRIMER. The present analysis built upon the initial coding by developing additional codes in response to the quantitative findings, and by drawing on existing concepts from the gendered risk environments of the events being investigated (i.e., the spatial, social, and economic environments of providing IDU initiation assistance; see Chapter 1, 'Conceptual Framework' section). Subsequently, we employed to develop themes from our qualitative data. An abductive approach involves producing speculative theoretical impressions in response to unexpected qualitative findings, and subsequently refining these emergent theories by systematically analyzing the variation in responses across the study.<sup>51</sup> As such, we developed themes from the data, informed by the aforementioned coding phase and the risk environment framework, and iteratively refined them through multiple coding stages.<sup>52,53</sup>

## RESULTS

### Quantitative Results

As shown in Table 3.1, a total of 2,625 PWID across the three cohorts provided responses to questions regarding the provision of injection initiation assistance, with 354 (13.5%) participants in San Diego, 531 (20.2%) in Tijuana, and 1,740 (66.3%) in Vancouver. Overall, 1,693 (64.5%) identified as male, 924 (35.2%) identified as female, 5 (0.2%) participants identified as transgender (all of these within the San Diego cohort), and 3 (0.1%) declined to provide data on gender. A total of 112 (4.3%) participants reported having provided IDU initiation assistance within the past six months, of whom 18 (16.1%) were recruited in San Diego, 23 (20.5%) in Tijuana, and 71 (63.4%) in Vancouver ( $p > 0.05$ ). Among this subsample, 34 (30.4%) were female, 76 (67.9%) were male, and two participants (1.8%) declined to provide data on their gender.

One hundred and ten participants (98.2%) reported on the gender(s) of the individual(s) to whom they recently (within the past six months) provided injection initiation assistance. The largest proportion of assisters ( $n = 39$ ; 35.5%) consisted of male participants who reported providing assistance to other males (MM). Additionally, 27 (24.5%) male participants provided initiation assistance to females (MF), 17 (15.5%) female participants assisted males (FM), 10 (9.1%) female participants reported providing assistance to females (FF), 10 (9.1%) male participants assisted individuals of both genders (MX), and 7 (6.3%) female participants assisted individuals of both genders.

Frequencies of IDU initiation gender pair types, and of gender concordance between assisters and assistees within these pairs, were analyzed across cohort location. As shown in Table 3.2, there were significant differences in IDU initiation pair type across location.

Specifically, the proportion of MM pairs (69.6%) was significantly larger, and the proportion of MF pairs (4.3%) was significantly smaller in Tijuana compared San Diego (MM = 29.4%; MF = 35.2%) or Vancouver ([MM = 25.7%; MF = 28.6%]  $p = 0.025$ ). As shown in Table 3.3, there was also a significantly larger proportion of gender concordant pairs (MM and FF) in Tijuana (73.9%) compared with San Diego (41.2%) or Vancouver (35.7%;  $p = 0.006$ ).

### **Qualitative Results**

The risk environment<sup>54</sup> provided the framework for the analysis of the qualitative narratives, which sought to contextualize the quantitative differences in the proportions of MM and gender concordant (both MM and FF) initiation pairs when comparing San Diego, Tijuana, and Vancouver. We analyzed the existing narratives to understand how the following risk environments produced the gender composition of IDU initiation events, across sites: (1) the spatial risk environment [i.e., the drug distribution routes, migration, and physical locations in which drug use-related risks are produced], (2) the social risk environment [i.e., the interpersonal relationships, social contexts, and social norms that produce drug use-related risk], and (3) the economic risk environment [i.e., access to income, societal healthcare spending, and the financial costs that produce drug use-related risk].<sup>54</sup> While the policy risk environment has been shown to potentially influence substance use risk behaviors, it was not referenced in the narratives, likely due to the fact that the interview guide did not specifically ask about the policy-related forces that might produce these gendered initiation events. Consequently, these results focus on narratives from the 61 participants (San Diego:  $n = 21$ , Tijuana:  $n = 21$ , and Vancouver  $n = 19$ ) that provided insight on the gendered spatial, economic, and social risk environments that produced the provision of IDU initiation assistance.

## **The Spatial Risk Environment**

Few participant accounts highlighted the role of gendered spatial risk environments in providing IDU initiation assistance. Three participants (one male and two females), however, recounted providing IDU initiation assistance within the context of jail or prison, where gender concordance is mandated:

*“... a girl that was [female name], right? That girl, well her boyfriend dumped her, left her there in jail. Paid her bail and he left, and that girl said she wanted to use drugs, because I saw her crying and crying, and I said, ‘this will calm you, you’ll see.’ So I injected her. And then she was all over me. All day.”* (Nancy, 39, Tijuana)

*“I met this youngster that I injected him for the first time...He lied to me and said that he had fixed before, and it was just like me, he wanted to fit in.”* (Israel, 44, Tijuana)

Incarceration has been shown to be a key risk environment for increased syringe sharing and HIV transmission.<sup>55</sup> These narratives highlight that the enforced gender concordance of jails and prisons also facilitates IDU initiation events. Specifically, within the spatial constraint of carceral environments, IDU initiation assistance is used as a tool to build social support and to ameliorate negative emotions.

Of note, narratives reflecting on providing IDU initiation assistance within prison/jail, though limited and exploratory in nature, only emerged from the Tijuana sample. This could potentially help explain the significant differences in the level of gender concordance among ‘assisters’ and ‘assistees’ involved in IDU initiation events across the three study sites.

## **The Social Risk Environment**

Intimate partnerships emerged as an important gendered social risk environment. This was particularly the case for participants’ provision of IDU initiation assistance in San Diego ( $n = 6$ ; 28.6%) versus in Tijuana ( $n = 4$ ; 19.0%) and in Vancouver ( $n = 3$ ; 15.8%). Additionally, this

theme appeared slightly more frequently in the narratives of women compared to men. Patricia's story, in which she recounts providing initiation assistance to an ex-husband, exemplifies how intimate partnerships can be a potential micro-level social risk environment that facilitates gender-discordant IDU initiation events:

*“But uhm I ended up meeting someone else and getting married to somebody else that would beat me up a lot. And uhm I did the same thing to him but not as much, you know I gave him his first shot. After that it was every six months or so he would want to do another shot. (Patricia, 54, San Diego)*

For Patricia, it appears that her history of intimate partner violence has contributed to her provision of IDU initiation assistance within the gendered risk environment of her relationships with men. Patricia also recounted previously providing IDU initiation assistance to an intimate partner that she suspected of trying to take over her drug dealing business. In that instance, Patricia provided an overly large dose to make him sick because her partner was physically abusive to her. These experiences suggest that Patricia was willing to provide initiation assistance to her intimate partners to maintain relationship and resource stability, despite – and perhaps, because of – the potential physical or economic harm that she experienced within those very same relationships. Similar to past studies examining risk environments among PWID, the narratives from the women in our sample suggest a complex interplay between social and structural factors, and existing gender power dynamics,<sup>32,56</sup> that serve to create risk environments for providing IDU initiation assistance.

This theme was further illustrated through the following account from Martina, in which she details her provision of IDU initiation assistance within the social context of an intimate partnership:

*“And that is why I ended up injecting him for the first time, I said, I’d rather do it and be checking on him than another person inject him and leave him alone. But honestly I did not like it, doing that was not really pleasant... but I saw that he kept saying that if I did not do it, I did not put it... he was going to put it with other people, with whomever it was. He is the father of one of my children, and I see him now and I feel bad and seeing him like that, because, well I should have avoided it, but perhaps maybe I wouldn’t have been able to avoid it.”*  
(Martina, 38, Tijuana)

Due to being involved with an intimate partner that had not previously injected, Martina was presented with a request for initiation assistance. Similar to what has previously been found in literature examining the provision of IDU initiation assistance,<sup>27</sup> Martina experienced a tension between the social norms against providing assistance and her concern for the well-being of her partner. The perceived inevitability of her partner’s initiation into IDU, and the fear of potential harm if he were to begin injecting with a stranger, subsequently led her to provide IDU initiation assistance to her partner. However, Martina’s narrative represents a minority of initiation events reported by participants in Tijuana where 82.6% were gender-concordant. This suggests that alternate pathways to IDU initiation (i.e., not in the context of intimate partnerships) are likely more common in Tijuana.

In Vancouver, however, a setting deeply affected by overdose mortality related to injection of adulterated opioids, gender discordant IDU initiation events were more frequently reported within the social context of caring for others in the face of an opioid overdose epidemic ( $n = 8$ ; 42.1%), rather than in the context of intimate partnerships ( $n = 3$ ; 15.8%). For example, the narratives from Angela and Arthur below describe how providing IDU initiation assistance can be viewed as an act of kindness and protection given the ubiquity of fentanyl adulteration in the unregulated drug supply, and the consequent dangers IDU-naïve individuals could be exposed to:

*“Well, I got them to use in front of me, right, instead of using for somebody that doesn’t care about them. And I’d show them how to do it properly, and like all the fucking tricks of the trade and how you use, right? And clean needles.”*  
(Angela, 47, Vancouver)

*“Because I know like they want to get high and they can’t at the moment. So, [I] say okay I’m gonna help him and why not? And because it’s, it, makes it good karma I guess.”* (Arthur, 34, Vancouver)

Within the larger context of the ongoing opioid overdose epidemic and the potential for IDU-related harms like HIV and HCV transmission, participants like Angela and Arthur view responding to requests for IDU initiation assistance as acts of “good karma.” In these processes, more experienced PWID can make sure that those seeking to initiate IDU do so with the appropriate dose, clean equipment, in a setting where they can be monitored for signs of overdose, and with people who would not take advantage of them. Both men ( $n = 3$ ) and women ( $n = 5$ ) reported providing initiation assistance as an act of caring in this setting, and they also reported providing assistance to both men and women. In Tijuana, however, past research has highlighted the existence of traditional gender roles in which women are proscribed from providing IDU initiation assistance and in which men are viewed as the protectors and providers of women.<sup>32,57</sup> This indicates that the need for caring within substance using social networks in light of an opioid overdose epidemic, coupled with differing gender norms across contexts, could be contributing to the greater gender discordance in IDU initiation events seen within the quantitative data from Vancouver.

### **The Intertwining of Economic and Social Risk Environments**

Eighteen interviewees (San Diego:  $n = 9$  (42.9%), Tijuana:  $n = 8$  (38.1%), Vancouver:  $n = 1$  (5.3%)) highlighted the interplay of gendered social and economic risk environments in potentiating IDU initiation events. For example, Aaron recounted growing up in family and gang environments in Tijuana where drug use and injecting were commonplace, so much so that he

reported learning the skills necessary to inject through providing IDU assistance to his parents when he was a child. In addition to this social context, Aaron described his experience providing IDU initiation assistance to a fellow gang member within the context of an underground economy:

*“Because I am a mobster. I live in that, I grew up in that. All my family feeds from that. We don’t sell drugs but we charge fees. I decide who sells and who doesn’t sell in my neighborhood...So, I remember, and he [the person he assisted] told me, ‘alright, teach me.’ ‘What do you want to learn? This is chiva, dude – heroin – chiva. You put it in the vein or you smoke it.’ And he says, ‘no, teach me how to inject it.’ ‘Oh, you want to be tecato [a heroin user]?’ ‘Yes. I want to know the feeling.’” (Aaron, 30, Tijuana)*

These economic and social risk environments, in which Aaron had an active role in his gang and had experience injecting, exposed him to requests for initiation assistance. In this context, the greater prevalence of MM initiation event types in Tijuana may, in part, be explained by the broader ordering by gender of economic environments related to drug selling, where the vast majority of participants are male.<sup>58,59</sup>

This is further exemplified by the following narrative from Julia, who recounts her experience providing IDU initiation assistance. Gendered social environments in which PWID encounter novice PWID individuals, coupled with the economic constraints of drug use, create a risk environment which facilitates injection initiation assistance:

*“It just depends. If they get me when I’m withdrawing, Imma do it [provide initiation assistance] (laughs). You know what I mean? But if I got some in my pocket [substances/ money], I’m not even going to bother. Everything is to the convenience of the, junkie, you could say.” (Julia, 27, Tijuana)*

Six (28.6%) other participants from Tijuana also discussed how the economic requirements of maintaining their substance use or their involvement in underground economies intertwined with their social risk environments to produce IDU initiation events. The social risk



environments most frequently reported in conjunction with these economic risk environments consisted of same gender peers and/or family. This is in-line with past research that has found that transitions into IDU can be socially sanctioned, and in some cases initiated, by substance use-involved families.<sup>31</sup> This combination of economic risk environments gendered social risk environments, and the aforementioned gendered expectations that men be providers likely explains the greater proportion of gender concordant IDU initiation events in Tijuana that participants reported.

Nine (42.9%) participants from San Diego and one (5.3%) participant from Vancouver highlighted similar intersections between economic constraints and social risk environments. The social risk environments most commonly reported as intersecting with these economic risk environments, however, were intimate partnerships. This is described in Arron's narrative, in which he recounts providing initiation assistance to three women, all of whom he dated and sold drugs to:

*"I started scoring for them and they started like, um, they started buying my, my dope as well. So I didn't, they were smoking at first and it took like a couple of weeks and and each individual I told, 'You girls are wasting it' and they said, 'What do you mean we are wasting it?', 'you know. 'You never slam, you never use a needle.' They were like, 'No,' and ever since I introduced them to a needle." (Arron, 34, San Diego)*

Past literature has identified intimate partnerships as an important site of IDU initiation events, especially when partners are faced with the economic constraints of maintaining their own and their partner's drug supply.<sup>17,30,32</sup> Furthermore, existing research demonstrates that there are gender differences in access to resources (e.g., money and drugs), and gendered divisions of labor in which men are often tasked with obtaining and controlling the substances used, within IDU-related intimate partnerships.<sup>32</sup> The salience of these economic constraints within the social

risk environment of intimate partnerships for participants in San Diego could therefore, in part, explain the greater proportion of gender-discordant IDU initiation pairs found in this context.

## **DISCUSSION**

We identified a significantly higher proportion of gender-discordant IDU initiation events in San Diego and Vancouver and a higher proportion of gender concordant pairs—specifically the MM pair type—in Tijuana. Qualitative data illustrated differing gendered spatial, social, and economic risk environments for the provision of IDU initiation assistance across these three settings. Past literature has reported on gendered roles within IDU initiation practices across settings, including women being more likely to share injection preparation equipment and to be initiated by an intimate partner or spouse.<sup>25,26</sup> We expand upon the existing research by exploring in granular detail the gender composition of IDU initiation events across three distinct sociocultural contexts in North America (i.e., San Diego, US, Tijuana, Mexico, and Vancouver, Canada).

Through this exploratory, secondary, mixed-methods analysis, we found that gender-discordant IDU initiation events (i.e., with ‘assisters’ and ‘assistees’ of different genders) were likely to occur within the micro-level social risk environment of intimate partnerships in San Diego, especially for women ‘assisters’, and in the meso-level social risk environment of the opioid overdose epidemic in Vancouver, which participants report increases their desire to protect vulnerable novice PWID from harm. The spatial risk environment of jails/prisons and the intersection of disproportionately male economic and social risk environments were also identified as contributing to gender concordant IDU initiation events in Tijuana. This could be driven, in part, by conflicting local laws and drug policy reform (i.e., *narcomenudeo*) within Tijuana, that have ultimately resulted in the extrajudicial arrest of people who use drugs despite

the broader depenalization of the possession of syringes and small amounts of drugs.<sup>60-62</sup> This is in contrast with the drug policing and policy environments in California, USA and Vancouver, Canada, in which there have been efforts to decriminalize or reduce felony convictions for drug possession and to employ health- and social service-related interventions within the justice system.<sup>63</sup>

The narratives from participants in San Diego also highlight the impact of economic instability felt by WWID, and the disproportionate influence of social support and intimate partners within IDU initiation processes. This dynamic interplay between economic and social risk environments within San Diego could be contributing to the higher prevalence of gender-discordant IDU initiation events. These findings can support the development of tailored, context-specific harm reduction and intervention programs. For example, existing interventions (such as Break the Cycle)<sup>19,64</sup> that effectively target transitions into IDU could be adapted to incorporate techniques, like technical skill and communication building, from couple-based interventions targeting HIV and HCV risk behaviors (such as Project Connect II and Project Renaissance)<sup>65</sup> for PWID in San Diego. Given the increased vulnerability of WWUD to intimate partner violence,<sup>16,17</sup> however, couple-based approaches may not always be the safest or most appropriate intervention techniques for WWID in these settings. Due to the intertwining of economic risk environments with intimate partnerships for WWID in San Diego, and past literature demonstrating that having access to money or other financial resources is associated with a reduced risk of HIV-related risk behaviors for women,<sup>66,67</sup> it is further recommended that economic empowerment interventions be employed to help ameliorate the economic constraints that produce injection related processes and risks for WWID in this geographic setting.

The narratives suggest that the social risk environment of ‘caring for others’ in light of an ongoing opioid overdose crisis was an important contributing factor to the greater proportion of gender-discordant IDU initiation events in Vancouver. In these narratives both MWID and WWID reported providing assistance in an effort to protect novice PWID from the dangers they could be exposed to both with an unregulated drug supply and in IDU initiation events. Similar to what has been found in the literature, the PWID in the current study had to weigh the potential for their assistee’s overdose against both the desire to protect individuals from beginning injecting and the gendered social norms proscribing providing initiation assistance.<sup>27,68</sup> Given the ubiquity of fentanyl in Vancouver, however, the desire to protect others from harm outweighed the desire to avoid providing initiation assistance for both MWID and WWID. Though there was only a marginal gender difference in assisters found within these narratives (Men:  $n = 3$ ; Women:  $n = 5$ ), past research has highlighted the existence of gendered social norms that promote higher levels of prosocial behaviors (i.e., helping, caring, sharing, guiding, etc.) among women,<sup>69</sup> and that women are more likely to report providing IDU initiation assistance to others in an effort to prevent injury.<sup>70</sup> This could indicate that the threat of overdose is so dire for PWID in Vancouver that it is disrupting gender norms surrounding prosocial behaviors, and moving injection initiation events from limited social groups like intimate partnerships or gender-concordant peer groups to broader more gender-discordant networks. As such, the opioid overdose epidemic and the social context of ‘caring for others’ within this sample may, in part, be contributing to the greater gender-discordant IDU initiation processes in this geographic context. Given the impact of the opioid overdose epidemic in this context, and that the overdose crisis shapes gendered norms and constrains PWID’s choices surrounding providing injection initiation assistance across MWID and WWID in Vancouver, it is recommended that evidence-

based treatments, like OAT, which have been associated with a reduced risk of providing injection initiation assistance,<sup>71,72</sup> be scaled up and made gender-specific in this setting.

Lastly, there was greater gender concordance among ‘assisters’ and ‘assisteers’ participating in IDU initiation events within Tijuana. Past research has demonstrated that policing practices in Tijuana are associated with greater secrecy on behalf of PWID to avoid harassment by law enforcement,<sup>73</sup> and that WWID in Tijuana are more likely to inject with trusted individuals within their own home.<sup>73</sup> Consequently, this could restrict women to injecting with other trusted women in their social networks where WWID have more autonomy over their injecting behavior,<sup>74</sup> and limit opportunities for WWID to inject in more public spaces where they might engage in mixed-gender IDU initiation events. Additionally, past literature has indicated that traditional gender roles and greater moral sanctions for women engaging in IDU could be further restricting women’s opportunities to engage in gender discordant initiation processes.<sup>32</sup> This was further supported by the narratives depicting economic risk environments in Tijuana, with participants often reporting gender-concordant peers and family intertwining with their underground economy involvement. The differences in the social and economic risk environments across contexts may be further contributing to greater gender concordance within individuals participating in IDU initiation events in Tijuana compared to other geo-cultural contexts.

### **Limitations**

This study has limitations typical of multi-site observational research. Non-probability sampling was used, and thus the sample may not be representative of the broader PWID population in each setting. We also note that the target population of interest is mobile and difficult to access, particularly in Tijuana, where PWID face vulnerabilities related to violence,

barriers to accessing health care services, and punitive policing practices.<sup>73,75,76</sup> In addition, due to high levels of cross-border migration and drug use in the San Diego-Tijuana international metropolitan region,<sup>77</sup> some of the initiation events reported by San Diego participants may have occurred in Tijuana, and vice versa. Additionally, small sample sizes served to limit statistical power and made multivariable analyses impractical; however, the use of a mixed methods approach allowed for quantitative findings to be explored in greater depth through qualitative methods.<sup>49</sup> Further, the qualitative data were collected prior to current the quantitative analysis, which limits the direct, in-depth exploration of the current study aim. The current study also employed a qualitative secondary analysis of the in-depth interviews collected for PRIMER, and therefore, the qualitative interview guides were not designed to answer the specific questions asked by the authors. Though critics of this approach argue that secondary research lacks first-hand knowledge of the qualitative data, which can weaken the rigor of the coding and analysis, others argue that this method maximizes the utility of data collected from hard to reach populations.<sup>78,79</sup> Additionally, the qualitative data collected through PRIMER were rich, and the complexity of the gendered risk environments for IDU initiation events were able to be fully explored. Furthermore, in order to strengthen the rigor of the present analysis, the social scientists involved in the primary data collection were directly engaged for the current analysis and interpretation.<sup>78</sup> Lastly, the subject of IDU initiation is highly stigmatized,<sup>80</sup> and the reliance on self-report within this study could therefore lead to underreporting of initiation behaviors, including the provision of assistance. Despite this potential source of bias, however, there was still large enough effect sizes to detect significant associations between study location and IDU initiation pair types. Relatedly, it is possible that, due to differences in social norms across

contexts, stigmatized behaviors such as providing IDU initiation assistance were differentially reported across sites.

## **Implications**

The present study indicates that the IDU initiation processes of PWID vary depending on gender and geo-cultural location (i.e., San Diego, Tijuana, or Vancouver). Programs to reduce the frequency of IDU initiation and its harms may use these findings to develop tailored outreach. This will likely require that existing interventions (such as Break the Cycle)<sup>19,64</sup> adapt to address gender-, site-, and population-specific factors to ensure effectiveness. In addition, given the importance of intimate partnerships as a micro-level social risk environment for IDU initiation events, it is recommended that existing couple-based interventions that harness these partnerships as sites of care, support, and risk reduction be adapted to target IDU initiation across contexts.<sup>65,81–83</sup> Furthermore, in order to effectively target transitions into drug injecting, it is recommended that interventions broaden their scope to target the meso- and macro-level spatial, social, and economic risk environments that produce IDU initiation events.

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Chapter 3, “Examining the gender composition of drug injecting events: A mixed methods investigation of three North American contexts” is currently being prepared for submission to the *International Journal of Drug Policy*. Claudia Rafful, Maria Luisa Mittal, Laramie Smith, Sonia Jain, Xiaoying Sun, Richard Garfein, Steffanie Strathdee, Kora DeBeck, Kanna Hayashi, Ryan McNeil, M-J Milloy, Michelle Olding, Andrew Guise, Dan Werb, and Ayden Scheim are co-authors. Stephanie Meyers, the dissertation author, is the primary author of this material.



**Table 3.1:** Injection initiation assistance provision and gender among people who inject drugs in San Diego, USA, Tijuana, Mexico, and Vancouver, Canada ( $n = 2,622$ )

<i>Categorical Variables</i>	<b>Overall <i>n</i>(%)</b>	<b>San Diego <i>n</i>(%)</b>	<b>Tijuana <i>n</i>(%)</b>	<b>Vancouver <i>n</i>(%)</b>
<b>Helped Someone Initiate Injection (Past 6 Months)</b>				
Yes	112(4.3)	18(5.1)	23(4.3)	71(4.1)
No	2,510(95.7)	334(94.9)	508(95.7)	1668(95.9)
<b>Gender</b>				
Male	1,693(64.6)	249(70.7)	326(61.4)	1118(64.3)
Female	924(35.2)	98(27.8)	205(38.6)	621(35.7)
Transgender	5(0.2)	5(1.5)	0	0
<b>Total</b>	2,622	352	531	1,739

**Table 3.2:** Fisher’s exact test assessing the gender composition of injection initiation events among people who inject drugs in San Diego, USA, Tijuana, Mexico, and Vancouver, Canada,  $p = .029$ .

Events	Site			Total
	SD Frequency (Column %)	TJ Frequency (Column %)	Vancouver Frequency (Column %)	
MM	5 (29.4)	16 (69.6)	18 (25.7)	39
MF	6 (35.2)	1 (4.3)	20 (28.6)	27
MX	2 (11.8)	2 (8.7)	6 (8.7)	10
FF	2 (11.8)	1 (4.3)	7 (10)	10
FM	2 (11.8)	3 (13.1)	12 (17)	17
FX	0 (0)	0 (0)	7 (10)	7
<b>Total</b>	17	23	70	110

MM = male assister, male assistee; MF = male assister, male assistee; MX = male assister, mixed gender assistees; FF = female assister, female assistee; FM = female assister, male assistee, FX = female assister, mixed gender assistees.

**Table 3.3:** Chi-square analysis of cohort and gender concordance of injection initiation events among people who inject drugs in San Diego, USA, Tijuana, Mexico, and Vancouver, Canada,  $\chi^2(2) = 10.32, p < .001$ .

<b>Events</b>	<b>Site</b>			<b>Total</b>
	<b>SD</b> Frequency (Column %)	<b>TJ</b> Frequency (Column %)	<b>Vancouver</b> Frequency (Column %)	
Concordant	7 (41.2)	17 (73.9)	25 (35.7)	49
Discordant	10 (58.8)	6 (26.1)	45 (64.3)	61
<b>Total</b>	17	23	70	110

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**CHAPTER 4: GENDER AND TIME TO THE PROVISION OF INJECTION  
INITIATION ASSISTANCE AMONG PEOPLE WHO INJECT DRUGS ACROSS TWO  
DISTINCT NORTH AMERICAN CONTEXTS: TIJUANA, MEXICO AND  
VANCOUVER, CANADA**

**ABSTRACT**

**Background:** Women are vulnerable to injection-related harms when initiating drug injecting, a process commonly facilitated by other people who inject drugs (PWID). Research is needed, however, regarding how the gender of PWID influences their risk of providing initiation assistance to others. We assessed the role of PWID gender on their first provision of initiation assistance across two geo-cultural settings.

**Methods:** Data were drawn from two prospective cohorts in Tijuana, Mexico and Vancouver, Canada participating in the *PReventing Injecting by Modifying Existing Responses* (PRIMER) study. Participants were restricted to PWID who had reported never providing injection initiation assistance at baseline. We then conducted site-specific discrete time survival analyses assessing the relationship between gender and other relevant covariates (i.e., age and age at first injection) on the risk of first provision of initiation assistance.

**Results:** Overall, 1,988 (Tijuana:  $n = 596$  (30%); Vancouver:  $n = 1,392$  (70%)) PWID were included. In Tijuana and Vancouver respectively, 256 (43%) and 511 (36.7%) participants were female, and 42 (1.7%) and 78 (1.6%) reported recent injection initiation assistance. After controlling for age and age at first injection, female gender was associated with a reduced risk of providing injection initiation assistance for the first time in Tijuana (Adjusted Hazard Ratio = 0.52, 95% Confidence Interval: 0.27-0.99), but not in Vancouver.

**Conclusions:** Female gender in Tijuana, but not Vancouver, was associated with a reduced risk of first provision of initiation assistance among PWID. These results can inform gender- and site-specific prevention efforts aimed at reducing transitions into drug injecting across geographic contexts.

## **BACKGROUND**

Women who inject drugs (WWID) comprise roughly a quarter to a third of people who inject drugs (PWID) populations in North America,<sup>1-5</sup> and have unique injection-related processes and harms when compared to their male counterparts.<sup>6-9</sup> For example, current evidence suggests interpersonal contexts, particularly intimate partnerships, are a potential source of vulnerability for WWID within injection initiation processes.<sup>8-11</sup> In qualitative investigations of gender dynamics within injection-related intimate partnerships, men who inject drugs (MWIDs) have been found to most often provide injection initiation assistance to their women partners and to take on the burden of care in accessing the resources necessary to inject.<sup>8</sup> WWID, however, experience both gendered vulnerability and agency within these injection-related intimate partnerships, including events that range from coercion into, to active requests for assistance in, initiating injection drug use (IDU).<sup>8,11</sup> Quantitative research has demonstrated that women may be at increased risk of bacterial infections, HIV, HCV, and physical harm due to increased rates of injection equipment sharing<sup>12</sup> and being injected after the person who helped them initiate IDU.<sup>6,7</sup> Compounding these harms further, WWID are more likely to report exchanging sex for money or drugs,<sup>13</sup> to have a history of intimate partner violence,<sup>13</sup> and to be at greater risk of physical and sexual violence from both intimate partners and acquaintances.<sup>14</sup> As such, there is a need for a greater understanding of gender-specific injection-related processes so that effective prevention, harm reduction, and treatment services for WWID can be developed.

### **The Macro Spatial Risk Environment: Geographic Context**

#### **Tijuana, Mexico**

Past literature has also highlighted the importance of geographical context for understanding injection initiation processes. For example, the San Diego-Tijuana border region

is a critical link within a drug trafficking route that transports cocaine, methamphetamine, and opioids from Mexico into the United States and Canada,<sup>15,16</sup> making this a crucial context in which to understand drug injecting practices. Furthermore, this border region exhibits high rates of IDU,<sup>16</sup> and the PWID within this context have been found to have elevated HIV and HCV prevalence.<sup>17,18</sup> Recent research has also demonstrated that there are significant gender differences in the provision of injection initiation assistance in Tijuana, with MWID over twice as likely to provide initiation assistance compared to WWID in this context.<sup>5</sup> This gender difference, however, was not found with PWID in San Diego or Vancouver.<sup>5</sup> This could potentially be due to the existence of traditional gender norms within Northern Mexico and Tijuana that impact the acceptability of substance use among women in that region,<sup>11,19</sup> thereby limiting the opportunities for women to provide injection initiation assistance. Given these known context-specific gender differences, risk behaviors, and social norms for PWID in Tijuana, more research is needed regarding how gender influences injection initiation processes in this setting.

### **Vancouver, Canada**

In comparison, Vancouver, Canada has been severely impacted by the ongoing opioid overdose epidemic, with a reported 2,913 opioid-related overdose fatalities across Canada in 2019, 27% of which were in the province of British Columbia (with the greatest number in the city of Vancouver),<sup>20</sup> and 25% of which were experienced by women.<sup>20</sup> In combination with this increase in opioid-related harms, PWID represent the population at highest risk for HCV infection in Canada.<sup>21</sup> In an effort to combat these substance use- and injection-related harms, Vancouver has employed a variety of harm reduction strategies, including having the first supervised injection facility (SIF) that is legally sanctioned for operation in North America.<sup>22</sup>

This SIF, InSite, has served to reduce the amount of syringe sharing among clients, decrease the amount of public injecting, increase attendance for detoxification programs and treatment uptake, and helps clients adopt safer injection practices.<sup>22</sup> A women-specific SIF, SisterSpace, has also been developed in Vancouver to provide a gender-responsive harm reduction service to WWID in light of the largely male-dominated clientele of InSite.<sup>23</sup> This convergence of the opioid epidemic, injection-related harms, and effective harm reduction strategies make Vancouver an important sociocultural context in which to better understand the influence of gender on injection-related processes.

### **The Current Study**

Given these known gendered and context-specific injection-related trajectories and harms, the current study sought to build upon the existing literature by longitudinally assessing the role of gender on injection initiation processes. The aim of this study was, therefore, to quantitatively assess the association between PWID gender and the first provision of injection initiation assistance across two macro spatial risk environments: Tijuana, Mexico and Vancouver, Canada. Based on previous cross-sectional research demonstrating significant gender differences in providing injection initiation assistance in Tijuana but not in Vancouver,<sup>24</sup> it was hypothesized that, among a sample of PWID, male gender would be associated with an increased risk of the provision of injection initiation assistance for the first time in Tijuana, Mexico, but not in Vancouver, Canada.

## **METHODS**

### **Sample**

Data for this study were drawn from *PReventing Injecting by Modifying Existing Responses* (PRIMER), which investigates whether interventions to reduce injection-related HIV

risk may be effective in preventing the provision of injection initiation assistance among PWID.<sup>1,25</sup> The methods for PRIMER, which employs a socio-structural interventional approach, have previously been described in full.<sup>1</sup> Briefly, PRIMER incorporates quantitative data pooled from existing prospective community-recruited cohort studies of PWID: among others, these include the *Proyecto El Cuete IV* (ECIV) cohort (Tijuana, Mexico) and the linked *Vancouver Drug Users Study* (VDUS) and the *AIDS Care Cohort to evaluate Exposure to Survival Services* (ACCESS; Vancouver, Canada) cohorts.<sup>1,17</sup> Though PRIMER also includes data from the *Study of Tuberculosis, AIDS, and Hepatitis C Risk* (STHR II) cohort (San Diego, USA), only baseline data were collected for this cohort and, therefore, these data could not be included in the present longitudinal analyses. For the purpose of the current study, participant eligibility was restricted to individuals who had completed the PRIMER baseline between August 2014 and May 2017, had at least one follow up visit, reported past 30-day injection drug use or street involvement at baseline, and reported never providing injection initiation assistance at baseline. The PRIMER study was approved by the University of California, San Diego Human Research Protections Program, the University of British Columbia/Providence Health Care Research Ethics Board, and the Universidad Xochicalo Ethics Committee. All recruited participants provided consent prior to enrollment.

As part of the parent study, PRIMER interviews collected data on the involvement of PWID in providing injection initiation assistance, including participants' self-reported experiences providing injection initiation assistance, sociodemographic information (e.g., gender, age, and age at first injection), non-injection and injection drug use, incarceration history and sex trading history. Lifetime and recent experiences (i.e., past six months) with these behaviors were explored during data collection and in follow-up interviews that occur



approximately every six months. Initially, two separate PRIMER quantitative baselines were constructed for the ECIV and VDUS/ACCESS cohorts separately, as anchors for our analyses. The PRIMER baseline was defined as the visit at which identical questions specific to providing injection initiation assistance were introduced into each cohort's surveys. The PRIMER baseline visits were undertaken beginning in August of 2014 and the data collected from biannual visits over the subsequent four-year period for Tijuana, and two- and half-year period for Vancouver, were analyzed.

## **Measures**

The purpose of this investigation is to determine whether there is a significant association between gender and providing injection initiation assistance for the first time among PWID in Tijuana and Vancouver. The independent variable for this analysis was participants' self-reported gender at baseline (i.e., Male/Female). No participants self-identified as transgender in Tijuana, and transgender participants were considered within the female group in Vancouver based on past research and the shared vulnerabilities between these two groups.<sup>26</sup> The outcome variable of interest was participants' recent (i.e., past six month) provision of injection initiation assistance. This variable was further operationalized as participants' dichotomous responses (i.e., yes vs. no) to the following item, "In the past six months, have you helped someone to inject who had never injected before?" The covariates considered for inclusion in the multivariable model were determined *a priori* based on existing PRIMER literature demonstrating their relationship with the independent variable, the outcome variable, or both. The covariates considered consisted of the following variables: age, age at first injection, recent non-injection use of heroin, cocaine, and methamphetamine, recent injection use of heroin, cocaine, methamphetamine, and

speedballs [i.e., heroin combined with either cocaine or methamphetamine], and recent sex work.<sup>5,27–29</sup>

## **Analysis**

A discrete-time survival analysis, unlike other methods of survival analysis, analyzes time in discrete blocks during which the event of interest (i.e., providing injection initiation assistance) could occur.<sup>30</sup> This method is appropriate for the current analyses due the dichotomous nature (i.e., yes/no) of the outcome variable of interest at each of the six-month follow-up interviews. As such, the data for the time to the first provision of injection initiation assistance is discrete in nature rather than continuous, and consequently, we are unable to determine the exact time point in which participants provided initiation assistance. This type of survival analysis is conducted as an extension of the Cox proportional hazards model and involves fitting a generalized linear model with a binomial error structure and a complementary log-log (clog-log) link.<sup>30</sup>

For the current study, a life table was initially created to summarize the discrete-time hazard (i.e., the conditional probability) of providing injection initiation assistance for the first time at each six-month follow-up visit for both Tijuana and Vancouver.<sup>30</sup> Subsequently, the data were stratified by gender and hazard probabilities were plotted in order to visually identify periods of increased risk for providing injection initiation assistance for the first time for men and women separately.<sup>30</sup> Bivariate discrete time survival analyses assessing the association between gender, and each of the aforementioned covariates of age, age at first injection, non-injection use of heroin, cocaine, and methamphetamine, injection use of heroin, cocaine, and methamphetamine, and sex work, and providing injection initiation assistance for the first time were then evaluated for each cohort, separately. Cohorts were analyzed separately to protect

against misclassification bias and measurement error that may result from the pooling of data collected with comparable, but not identical, interview guides and study timelines. Additionally, as determined *a priori*, variables associated with ever providing injection initiation assistance for the first time in bivariate analyses at the  $p < 0.05$  level were retained for inclusion in the multivariable model. Gender, participant age, and age at first injection were also included in the multivariable model to control for the impact of these covariates regardless of their association with providing injection initiation assistance for the first time at the bivariate level. Additionally, all variables identified in the bivariate analyses were assessed for potential issues of multicollinearity through correlational analyses.<sup>31</sup> Only those variables that were not highly correlated with one another (i.e., a correlation coefficient  $< 0.50$ ) were retained in the subsequent multivariable analyses.<sup>31</sup> We then employed a multivariable discrete time survival analysis approach, for each cohort, in which all variables of interest were entered simultaneously. This method of model building was employed in order to reduce the potential for biased parameter estimates, p-values, and standard errors that can result from other methods of model building (i.e., confounding and stepwise model building approaches).<sup>31</sup> Furthermore, for all discrete-time survival analyses, participants did not contribute to the risk calculations for any time period after the visit in which they reported providing injection initiation assistance for the first time or were censored (i.e., due to loss-to-follow-up or the end of the study window). All descriptive and survival analyses were conducted in SAS On Demand for Academics (SAS Institute Inc., Cary, North Carolina, USA).

### **Post Hoc Analyses**

Furthermore, to provide context for the results of the survival analyses and to fully explore the impact of gender on the variables of interest, additional descriptive analyses were

conducted. Specifically, bivariate and multivariable regression analyses were conducted to assess the relationship between gender and the covariates that were found to be associated with the provision of injection initiation assistance for the first time within the aforementioned survival analyses. Additionally, chi-square analyses were conducted to assess the relationship between participant gender and the gender of those individuals that participants provided injection initiation assistance to for the first time.

## **RESULTS**

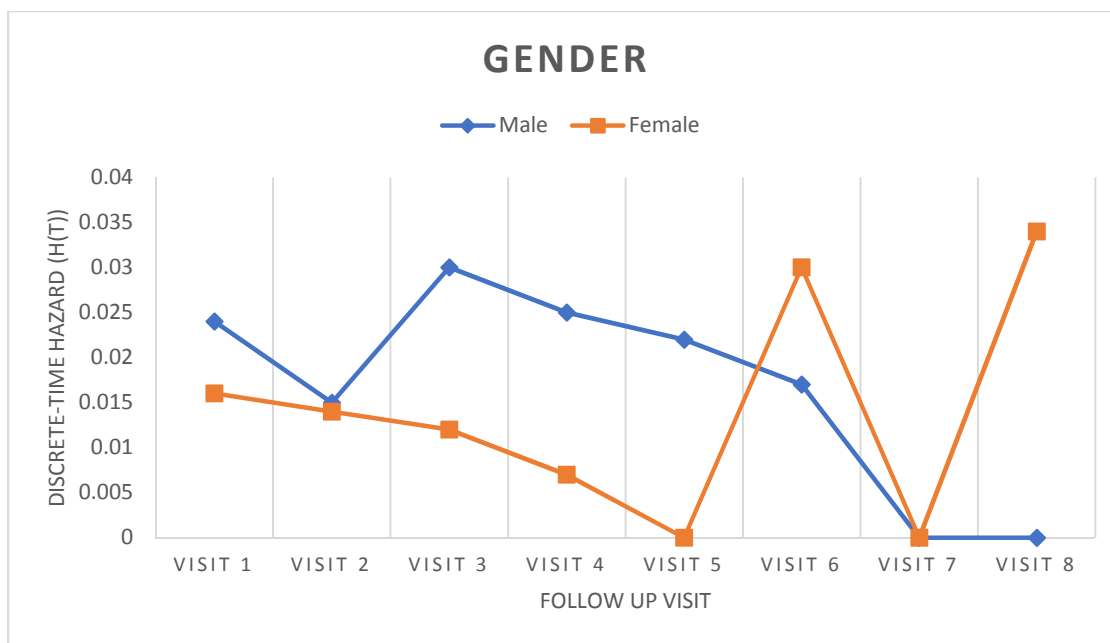
Overall, 1,988 PWID participated in the PRIMER baseline interview and completed at least one follow up interview, including 596 (30%) from Tijuana and 1392 (70%) from Vancouver. Of these included participants, 256 (43.0%) and 511 (36.7%) self-identified as female in Tijuana and Vancouver, respectively ( $p = .009$ ). The average age of participants was 41.2 years old (Standard Deviation [ $SD$ ] = 9.1) in Tijuana and 43.1 years old ( $SD = 13.1$ ) in Vancouver (See Table 4.1 for a summary of baseline sample characteristics). Cumulatively, there were 2,522 (Median: 3; Interquartile Range (IQR): 3-5) and 4,873 (Median: 2; IQR: 1-4) visits across the study period for Tijuana and Vancouver; and a total of 42 (1.7%) participants in Tijuana and 78 (1.6%) participants in Vancouver reported providing injection initiation assistance for the first time during the study period ( $p = .835$ ). A total of 128 (21.5%) participants were retained until the final (i.e., eighth) follow-up visit in Tijuana and 577 (41.5%) participants were retained until the final (i.e., fifth) follow-up visit in Vancouver. For Tijuana, the sixth follow-up visit had the highest probability (2.3%) of providing injection initiation assistance for the first time, whereas the seventh visit had the lowest probability (0%). For Vancouver, the first follow-up visit had the highest probability (2%) of providing injection initiation assistance for the first time and the fifth visit had the lowest probability (0.5%). See

Table 4.2 for the probability of providing injection initiation assistance for the first time across all follow-up visits.

### **Discrete-Time Survival Analysis**

#### **Proyecto El Cuete, Tijuana**

Participant age was associated in bivariate analysis with the provision of injection initiation assistance among participants from Tijuana. More specifically, for every one-year increase in age, participants were 6% less likely to provide first-time injection initiation assistance in Tijuana (Hazard Ratio [ $HR$ ] = 0.94 [95% Confidence Interval (CI): 0.91-0.98],  $p = .002$ ). Gender, however, was not associated with providing injection initiation assistance for the first time in the bivariate analysis ( $HR = 0.65$  [95% CI: 0.35-1.23],  $p = .187$ ). Despite gender not being associated with providing injection initiation assistance in the bivariate analysis, Figure 4.1 suggests that the hazard for providing injection initiation assistance for the first time was greater among men for five out of the eight follow-up visits.



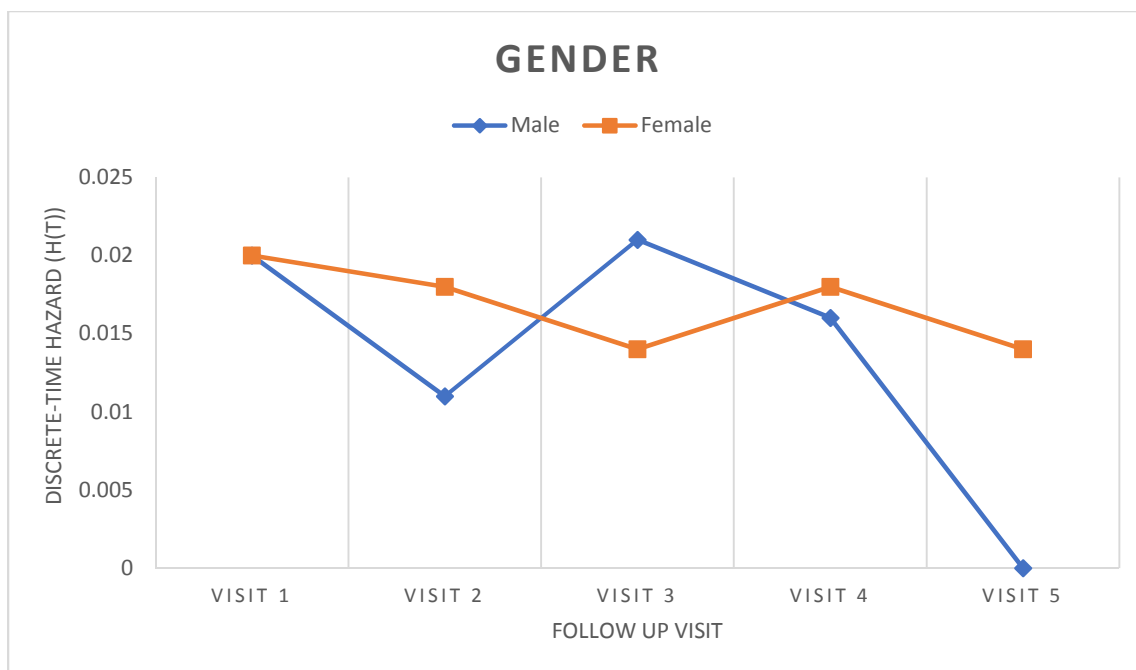
	Number of participants in risk set (Number of participants providing assistance)							
Male	340(8)	274(4)	197(6)	155(4)	135(3)	115(2)	95(0)	69(0)
Female	256(4)	220(3)	171(2)	144(1)	115(0)	101(3)	76(0)	59(2)

**Figure 4.1.** Discrete-time hazard of providing injection initiation assistance for the first time across six month follow-up visits by participant gender in Tijuana, Mexico ( $N_{visits} = 2,522$ ;  $N_{participants} = 596$ ;  $N_{events} = 42$ )

In multivariable analysis, age retained an inverse association with providing initiation assistance for the first time, with older participants 7% less likely to provide injection initiation assistance for the first time across the study duration ( $HR = 0.93$  [95% CI: 0.90-0.97],  $p = .001$ ). Additionally, women were almost 50% less likely than men to provide initiation assistance for the first time ( $HR = 0.52$  [95% CI: 0.27-0.99],  $p = .048$ ) when controlling for covariates. No other variables were associated with providing injection initiation assistance for the first time in the multivariable model for the Tijuana cohort. See Table 4.3 for a summary of survival analysis results for participants from the Tijuana cohort.

### **VDUS/ACCESS, Vancouver**

Age was inversely associated with the risk of providing injection initiation assistance for the first time at the bivariate level among participants in Vancouver. Specifically, for every one-year increase in age, participants were 5% less likely to provide injection initiation assistance for the first time ( $HR = 0.95$  [95% CI: 0.93-0.96],  $p < .001$ ). In addition, those that reported recently engaging in sex work were almost 4 times more likely to provide injection initiation assistance for the first time when compared to those who had not engaged in sex work ( $HR = 3.66$  [95% CI: 2.11-6.35],  $p < .001$ ). Furthermore, those that reported recent non-injection use of methamphetamine were almost 4 times as likely to provide initiation assistance for the first time ( $HR = 3.74$  [95% CI: 2.04-5.84],  $p < .001$ ). Also, those that reported recent injection use of heroin ( $HR = 2.88$  [95% CI: 1.84-4.51],  $p < .001$ ), methamphetamine ( $HR = 4.02$  [95% CI: 2.58-6.28],  $p < .001$ ), and speedballs ( $HR = 2.61$  [95% CI: 1.02-5.68],  $p = .015$ ) were more likely to provide first-time injection initiation assistance compared to those that did not report recent injection use of these substances. Lastly, gender was not associated with providing injection initiation assistance for the first time in the bivariate analysis (See Figure 4.2;  $HR = 1.16$  [95% CI: 0.74-1.83],  $p = 0.513$ ). See Table 4.3 for a summary of survival analysis results for participants from Vancouver.



	Number of participants in risk set (Number of participants providing assistance)				
Male	881 (18)	735 (8)	609 (13)	500 (8)	370 (0)
Female	511 (10)	436 (8)	349 (5)	275 (5)	207 (3)

**Figure 4.2.** Discrete-time hazard of providing injection initiation assistance for the first time across six month follow-up visits by participant gender in Vancouver, Canada ( $N_{\text{visits}} = 4,873$ ;  $N_{\text{participants}} = 1,392$ ;  $N_{\text{events}} = 78$ )

At the multivariable level, for every one-year increase in age, participants were 6% less likely to provide injection initiation assistance for the first time ( $HR = 0.94$  [95% CI: 0.92-0.96],  $p < .001$ ). Furthermore, for every one-year increase in the participants' age at first injection, participants were more likely to provide injection initiation assistance for the first time ( $HR = 1.04$  [95% CI: 1.01-1.07],  $p = .014$ ). Those that reported recent non-injection methamphetamine use ( $HR = 1.93$  [95% CI: 1.14-3.26],  $p = .014$ ) and recent injection speedball use ( $HR = 2.04$  [95% CI: 1.09-5.32,  $p = .031$ ) were more likely to provide initiation assistance for the first time when compared to those that did not use those substances. Similarly, those that reported recently engaging in sex work were almost twice as likely to provide injection initiation assistance for the first time when compared to those who had not ( $HR = 1.97$  [95% CI: 1.08-3.61],  $p = .028$ ). There



was also a moderate association between recent injection heroin and methamphetamine use and providing injection initiation assistance for the first time. Those that reported recent injection heroin ( $HR = 1.61$  [95% CI: 0.97-2.66],  $p = 0.068$ ) and methamphetamine use ( $HR = 1.65$  [95% CI: 0.99-2.74],  $p = 0.054$ ) were more likely to provide injection initiation assistance for the first time when compared to those that did not report recent injection use of these substances. No other variables, including gender, were associated with providing injection initiation assistance for the first time in the multivariable model for Vancouver participants.

### **Post Hoc Gender Analyses**

To better understand these site-specific differences in the factors associated with providing of injection initiation assistance for the first time, and to further contextualize the differences in gender associations across Tijuana and Vancouver, post hoc analyses were conducted to assess gender differences in those factors found to be associated with providing initiation assistance for the first time in the survival analyses and in the gender(s) of those they provided initiation assistance to.

### **Proyecto El Cuete, Tijuana**

For ECIV participants in Tijuana, there were bivariate gender differences in age, age at first injection, recent non-injection methamphetamine use, and recent sex work. Specifically, the women in the ECIV sample were younger (Women: Mean ( $M$ ) = 40.60 years; Men:  $M = 44.55$  years;  $\beta = 3.95$  [95% CI: 3.24-4.67],  $p < .001$ ), and began injecting at an older age (Women:  $M = 22.41$  years; Men:  $M = 20.58$  years;  $\beta = -1.83$  [95% CI: -2.36 - -1.29],  $p < .001$ ), compared to men. In addition, women enrolled in ECIV were more likely to have recently used non-injection heroin (Odds Ratio ( $OR$ ) = 1.62 [95% CI: 1.16-2.27],  $p = .005$ ), used non-injection methamphetamines ( $OR = 2.25$  [95% CI: 1.89-2.69],  $p < .001$ ), and to have recently engaged in

sex work compared to men enrolled in ECIV ( $OR = 27.95$  [95% CI: 18.33-42.63],  $p < .001$ ). At the multivariable level, gender remained associated with age, age at first use, non-injection methamphetamine use, and sex work. No significant associations were found, however, between participants' gender and the gender of those they provided initiation assistance to for the first time. See Table 3.4 for a summary of gender differences across cohort locations (i.e., Tijuana and Vancouver).

### **VDUS/ACCESS, Vancouver**

Among participants in Vancouver, at the bivariate level, women were significantly younger (Women:  $M = 42.47$  years; Men:  $M = 45.87$  years;  $\beta = 3.40$  [95% CI: 2.63-4.17],  $p < .001$ ) and had begun injecting at a younger age (Women:  $M = 21.64$  years; Men:  $M = 23.63$  years;  $\beta = 1.99$  [95% CI: 1.43-2.55],  $p < .001$ ) compared to men. In addition, women were more likely to report recent injection heroin use ( $OR = 1.49$  [95% CI: 1.31-1.70],  $p < .001$ ) and recent injection speedball use ( $OR = 1.94$  [95% CI: 1.43-2.64],  $p < .001$ ), and less likely to report recent injection methamphetamine use ( $OR = 0.84$  [95% CI: 0.73-0.98],  $p = .023$ ). Lastly, women were over ten times more likely to have recently engaged in sex work compared to men in this geographic context ( $OR = 10.17$  [95% CI: 7.61-13.59],  $p < .001$ ). In multivariable analysis, gender remained associated with age, age at first injection, recent injection methamphetamine use, recent injection speedball use, and recent sex work for participants in Vancouver. In chi-square analyses, participant gender was associated with the gender of those they provided assistance to for the first time. Specifically, there was a higher proportion of women (77.4%) providing initiation assistance to men when compared to their male counterparts (55.3%;  $\chi^2 = 3.96$ ,  $p = .047$ ). There was also a higher proportion of men (63.8%) providing

initiation assistance to women when compared to their female counterparts (32.3%;  $\chi^2 = 7.45$ ,  $p = .006$ ).

## **DISCUSSION**

The results from the current study highlight the importance of the interface between macro spatial risk environments (i.e., geographic contexts) and gender in understanding injection drug use initiation processes. For example, female gender was associated with a reduced risk of providing injection initiation assistance for the first time in the spatial risk environment of Tijuana, but not in Vancouver. This is in-line with, and extends, existing research that found a cross-sectional relationship between gender and having ever provided injection initiation assistance in Tijuana but not in San Diego or Vancouver.<sup>24</sup> This could be due, in part, to traditional gender norms and gendered substance use-related stigma in Tijuana, which prohibit women from providing injection initiation assistance in this geographic context.<sup>11,32</sup> In addition, younger age was associated with a greater risk of providing injection initiation assistance for the first time among PWID in Tijuana. As such, existing interventions that effectively target transitions into drug injection (i.e., Break the Cycle and Change the Cycle)<sup>33,34</sup> could use this information to adapt their interventions to be both gender- and site-specific (i.e., tailoring intervention efforts to young MWID within the socio-geographic context of Tijuana, Mexico).

In contrast, in the macro spatial risk environment of Vancouver, age at first injection, engaging in sex work, and non-injection methamphetamine use were associated with the providing injection initiation assistance for the first time among PWID. In line with past research that found an association between sex trade involvement and injection drug use in Canada,<sup>42,43</sup> participants that recently engaged in sex work were more likely to provide injection initiation assistance. This could be due, in part, to drug sharing practices within the context of sex work,<sup>35</sup>

that could be heightening the risk of being asked to provide injection initiation assistance from injection-naïve clients. Further, these results indicate that, along with its known impact on increasing the risk of disease transmission among PWID, sex work may also be an important avenue of intervention for preventing transitions into drug injecting. As such, it is recommended that existing interventions that target infectious disease transmission among populations engaged in sex work, including sex worker-led and community empowerment programs,<sup>36</sup> be adapted to also target transitions into drug injecting for PWID in this context by incorporating techniques from Break the Cycle and Change the Cycle (i.e., incorporating injection initiation and harm reduction informational and training sessions into the community empowerment programs).<sup>33,34</sup> Further, existing literature demonstrates that structural-level interventions, like the decriminalization of sex work, effectively reduce disease transmission for sex workers through ensuring healthy and safe working conditions.<sup>36</sup> Consequently, it is possible that the decriminalization of sex work could serve to reduce transitions into drug injecting in this geo-cultural context as well through the regulation of working conditions and by providing protection against requests for injection initiation assistance for WWID engaged in sex work, though further research is needed to assess the impact of this policy on injection initiation processes.

Additionally, the present analyses illustrated that those who had recently used non-injection methamphetamine were more likely to provide injection initiation assistance for the first time in Vancouver. This finding is consistent with past research that found non-injection crystal methamphetamine use was associated with injection drug use initiation among street-involved youth in Vancouver.<sup>37</sup> As such, non-injection methamphetamine use could also be an important area of focus, and it is recommended that the interventions targeting transitions into injection drug use, like Break the Cycle and Change the Cycle,<sup>33,34</sup> be adapted to include

techniques that have been effective in reducing substance use-related behaviors among people who use methamphetamines (i.e., contingency management and strengths-based case management)<sup>38</sup> for PWID in Vancouver.

Furthermore, though gender was not significantly associated with providing injection initiation assistance for the first time among PWID in Vancouver, the post hoc analyses illustrated that many of the factors that were associated with providing of initiation assistance were gendered in nature. For example, women were more likely to have recently engaged in sex work and to have injected speedballs, both factors that were associated with providing initiation assistance for the first time in the survival analysis results for participants in Vancouver. Additionally, male gender was associated with providing injection initiation assistance to women, and female gender was associated with providing injection initiation assistance to men in this context. This indicates that, though gender alone was not associated with providing injection initiation assistance for the first time in Vancouver, gender is an important factor in injection initiation processes, and we cannot effectively target transitions into drug injecting without adapting our outreach efforts to be gender-responsive. Specifically, these results highlight that tailoring injection initiation interventions towards WWID who inject speedballs and engage in sex work, and MWID who use non-injection methamphetamines, in Vancouver will be need to ensure effectiveness. Consequently, these results highlight the need for greater gender-specific harm reduction and intervention approaches within each geographic context.

### **Limitations**

The provision of injection initiation assistance is highly stigmatized, and the reliance on self-report within the current study therefore likely led to underreporting of this behavior, thereby potentially limiting the power of the statistical analyses. Despite the potential

underreporting of injection initiation assistance provision, however, there were still large enough effect sizes to identify significant associations between the variables of interest. It is also possible that, due to differences in social norms across contexts, the level of stigma associated with injection initiation assistance provision was different across sites, thereby resulting in differential reporting. Participants within cohorts participating in PRIMER, however, were informed of the confidential nature of the study, and interviewers trained in building trust established rapport with participants over years, both techniques employed to ameliorate potential social desirability bias. Further, data for each cohort were analyzed separately to protect against any misclassification bias and measurement error that may result from the pooling of data from differing socio-cultural contexts. In addition, though past research has found that underreporting of substance use-related behaviors due to social desirability bias is common in studies of drug use, rates of underreporting have been found to be lower among PWID populations.<sup>39-42</sup>

Non-probability sampling was used in the recruitment of participants in all cohort settings for PRIMER. Without the use of probabilistic sampling techniques (e.g., simple random sampling), it is not possible to ensure that the pooled sample of PWID obtained is representative of the overall target population. We also note that the target population of interest is mobile and difficult to access, particularly in Tijuana, where PWID face a number of vulnerabilities, including barriers to accessing evidence-based drug treatment programs and punitive policing practices that conflict with existing narcomenudeo policy, a policy that depenalizes the possession of small amounts of substances.<sup>32,43-48</sup> In addition, due to the use of a longitudinal design within the current study, and the mobile nature of the target population, attrition is a potential limitation for these analyses. Furthermore, the number of people reporting providing

injection initiation assistance in the past six months across the study period is relatively small (Tijuana:  $n = 42$ ; Vancouver:  $n = 78$ , 1.5%-1.6% of each sample). Consequently, the statistical power for the included analyses is limited, which may have increased the likelihood of Type II error (i.e., failing to detect a significant association when, in fact, there is one). Despite this limitation, however, we had sufficient power to identify a number of associations within both bivariate and multivariable analyses. Additionally, to further protect against low power, post hoc analyses were conducted to provide additional context for the relationship between the variables of interest.

### **Implications**

Given the current opioid overdose epidemic,<sup>49,50</sup> known gendered risks in the process of injection initiation,<sup>5,6</sup> and the heightened vulnerability of women who inject drugs,<sup>7-9,14</sup> there is a need for effective, gender- and context-specific harm reduction and injection prevention services. The knowledge gained from the current study is critical for the development of tailored prevention and harm reduction efforts that seek to reduce transitions into drug injecting among underserved populations of people who use drugs, which, in turn, would reduce disease transmission, overdose death, and other injection-related harms. Results of the current study indicate that, in Tijuana, men were more likely to provide injection initiation assistance for the first time compared to women. Additionally, though gender was not associated with time to the provision of injection initiation assistance in Vancouver, when gender differences in factors associated with providing initiation assistance (e.g., sex work, non-injection methamphetamine use, and injection speedball use) were assessed, we found that women were more likely to have recently engaged in sex work, injection speedball use, and report providing initiation assistance to men. These findings build on previous research to delineate the gendered aspects of injection

initiation trajectories and demonstrate that the impact of gender within injection initiation processes varies across geographic context. As such, we recommend that existing interventions aimed at preventing transitions into injecting (e.g., Break the Cycle or Change the Cycle<sup>33,34</sup>) be tailored towards young MWID in Tijuana, and that structural-level policy decriminalizing sex work and community empowerment interventions targeting infectious disease transmission among sex workers,<sup>36</sup> be employed in Vancouver to help reduce injection initiation processes and related harms.

## **ACKNOWLEDGEMENTS**

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Chapter 4, “Gender and time to the provision of injection initiation assistance among people who inject drugs across two distinct North American contexts: Tijuana, Mexico and Vancouver, Canada” is currently being prepared for submission to Drug and Alcohol Dependence. Sonia Jain, Xiaoying Sun, Charles Marks, M-J Milloy, Kora DeBeck, Kanna Hayashi, Steffanie Strathdee, and Dan Werb are co-authors. Stephanie Meyers, the dissertation author, is the primary author of this material.



**Table 4.1:** Baseline provision of injection initiation assistance and demographic factors among PWID in Tijuana, Mexico ( $n = 596$ ) and Vancouver, Canada ( $n = 1392$ ).

<i>Categorical Variables</i>	<b>Overall <i>n</i>(%)</b>	<b>Tijuana <i>n</i>(%)</b>	<b>Vancouver <i>n</i>(%)</b>
<i>Gender</i>			
Male	1221(61.4)	340(57.1)	881(63.3)
Female	609(30.6)	98(43.0)	511(36.7)
<i>Housing Status (Past 6 Months)</i>			
Homeless	286(16.6)	61(11.3) <sup>c</sup>	225(19.0) <sup>d</sup>
Not Homeless	1438(83.4)	478(88.7) <sup>c</sup>	960(81.0) <sup>d</sup>
<i>Ever Lived in US</i>			
Yes	--	338(56.7)	--
No	--	258(43.3)	--
<i>Non-Injected Heroin Use (Past 6 Months)</i>			
Yes	173(9.9)	29(5.2) <sup>a</sup>	144(12.2) <sup>d</sup>
No	1571(90.1)	530(94.8) <sup>a</sup>	1041(87.8) <sup>d</sup>
<i>Non-Injected Methamphetamine Use (Past 6 Months)</i>			
Yes	447(25.6)	174(31.1) <sup>a</sup>	273(23.0) <sup>d</sup>
No	1297(74.4)	385(68.9) <sup>a</sup>	912(77.0) <sup>d</sup>
<i>Non-Injected Cocaine Use (Past 6 Months)</i>			
Yes	505(29.0)	9(1.6) <sup>a</sup>	496(41.9) <sup>d</sup>
No	1239(71.0)	550(98.4) <sup>a</sup>	689(58.1) <sup>d</sup>
<i>Injected Heroin Use (Past 6 Months)</i>			
Yes	714(40.9)	300(53.7) <sup>a</sup>	414(34.9) <sup>d</sup>
No	1030(59.1)	259(46.3) <sup>a</sup>	771(65.1) <sup>d</sup>
<i>Injected Methamphetamine Use (Past 6 Months)</i>			
Yes	349(20.0)	47(8.4) <sup>a</sup>	302(25.5) <sup>d</sup>
No	1395(80.0)	512(91.6) <sup>a</sup>	883(74.5) <sup>d</sup>
<i>Injected Cocaine (Past 6 Months)</i>			
Yes	223(12.8)	7(1.3) <sup>a</sup>	216(18.2) <sup>d</sup>
No	1521(87.2)	552(98.7) <sup>a</sup>	969(81.8) <sup>d</sup>
<i>Injected Speedball (Past 6 Months)</i>			
Yes	223(12.8)	7(1.3) <sup>a</sup>	216(18.2) <sup>d</sup>
No	1521(87.2)	552(98.7) <sup>a</sup>	969(81.8) <sup>d</sup>
<i>Exchanged Sex (Past 6 Months)</i>			
Yes	208(11.7)	93(15.6)	115(9.7) <sup>d</sup>
No	1573(88.3)	503(84.4)	1070(90.3) <sup>d</sup>

**Table 4.1:** Baseline provision of injection initiation assistance and demographic factors among PWID in Tijuana, Mexico ( $n = 596$ ) and Vancouver, Canada (Continued) ( $n = 1392$ ).

<i>Categorical Variables</i>	<b>Overall <i>n</i>(%)</b>	<b>Tijuana <i>n</i>(%)</b>	<b>Vancouver <i>n</i>(%)</b>
<i>Age (Mean, SD)</i>	--	41.2(9.1)	43.1(13.1)
<i>Years Since First Injection (Mean, SD)</i>	--	21.6(25.6)	22.6(8.9)
<i>Age at First Injection (Mean, SD)</i>	--	21.2(6.7)	22.1(13.5)
<b>Total</b>	1988	596	1392

<sup>a</sup>Only 559 respondents provided responses to this question.

<sup>b</sup>Only 1,181 respondents provided responses to this question.

<sup>c</sup>Only 539 respondents provided responses to this question.

<sup>d</sup>Only 1,185 respondents provided responses to this question.

**Table 4.2** Probability of providing injection initiation assistance by six month follow-up visit among PWID in Tijuana, Mexico ( $N_{\text{participants}} = 596$ ;  $N_{\text{visits}} = 2,522$ ;  $N_{\text{events}} = 42$ ) and Vancouver, Canada ( $N_{\text{participants}} = 1,392$ ;  $N_{\text{visits}} = 4,873$ ;  $N_{\text{events}} = 78$ ).

<b>Tijuana</b>						
Follow Up Visit	Interval (Months)	At-Risk at Start of Interval	Number Of		Probability Of	
			1 <sup>st</sup> Provision of Initiation Assistance During Interval	Censored at the End of Interval	1 <sup>st</sup> Provision of Initiation Assistance During Interval (%)	No Provision Initiation Assistance During Interval (%)
1	(0-6)	596	12	102	2.0%	98.0%
2	(7-12)	494	7	126	1.4%	98.6%
3	(13-18)	368	8	69	2.2%	97.8%
4	(19-24)	299	5	49	1.7%	98.3%
5	(25-30)	250	3	34	1.2%	98.8%
6	(31-36)	216	5	45	2.3%	97.7%
7	(37-42)	171	0	43	0%	100%
8	(43-48)	128	2	126	1.6%	98.4%
<b>Vancouver</b>						
Follow Up Visit	Interval (Months)	At-Risk at Start of Interval	Number Of		Probability Of	
			1 <sup>st</sup> Provision of Initiation Assistance During Interval	Censored at the End of Interval	1 <sup>st</sup> Provision of Initiation Assistance During Interval (%)	No Provision Initiation Assistance During Interval (%)
1	(0-6)	1,392	28	221	2.0%	98.0%
2	(7-12)	1,171	16	213	1.4%	98.6%
3	(13-18)	958	18	183	1.9%	98.1%
4	(19-24)	775	13	198	1.7%	98.3%
5	(25-30)	577	3	574	0.5%	99.5%

**Table 4.3** Testing the association between gender and providing injection initiation assistance for the first time among PWID in Tijuana, Mexico and Vancouver, Canada.

	Recent Provision of Injection Initiation Assistance							
	Tijuana				Vancouver			
	No n(%)	Yes n(%)	Univariable Hazard Ratio (95% CI) p-value	Multivariable Hazard Ratio (95% CI) p-value	No n(%)	Yes n(%)	Univariable Hazard Ratio (95% CI) p-value	Multivariable Hazard Ratio (95% CI) p-value
<i>Gender</i>								
Male	1353 (98.0)	27 (2.0)	0.65 (0.35-1.23) .187	<b>0.52</b> <b>(0.27-0.99)</b> <b>.048</b>	3048 (98.5)	47 (1.5)	1.16 (0.74-1.83) .513	0.84 (0.51-1.37) .482
Female	1127 (98.7)	15 (1.3)			1747 (98.3)	31 (1.7)		
<i>Age</i>								
			<b>0.94</b> <b>(0.91-0.98)</b> <b>.002</b>	<b>0.93</b> <b>(0.90-0.97)</b> <b>.001</b>			<b>0.95</b> <b>(0.93-0.96)</b> <b>&lt; .001</b>	<b>0.94</b> <b>(0.92-0.96)</b> <b>&lt; .001</b>
<i>Age at First Injection</i>								
			0.92 (0.62-1.36) .667	0.99 (0.94-1.05) .784			1.00 (0.98-1.03) .985	<b>1.04</b> <b>(1.01-1.07)</b> <b>.014</b>
<i>Non-Injection Heroin Use (Past 6 Months)</i>								
Yes	144 (97.3)	4 (2.7)	1.39 (0.50-3.89) .532	--	507 (95.7)	23 (4.3)	<b>3.07</b> <b>(1.89-4.99)</b> <b>&lt; .001</b>	1.23 (0.71-2.13) .467
No	2141 (98.3)	38 (1.7)			3819 (98.6)	55 (1.4)		
<i>Non-Injection Cocaine Use (Past 6 Months)</i>								
Yes	57 (96.6)	2 (3.4)	1.65 (0.40-6.83) .490	--	1667 (98.3)	29 (1.7)	0.99 (0.63-1.57) .979	--
No	2228 (98.2)	40 (1.8)			2659 (98.2)	49 (1.8)		
<i>Non-Injection Meth Use (Past 6 Months)</i>								
Yes	752 (98.6)	11 (1.4)	0.73 (0.37-1.46) .374	--	979 (96.0)	41 (4.0)	<b>3.74</b> <b>(2.40-5.84)</b> <b>&lt; .001</b>	<b>1.93</b> <b>(1.14-3.26)</b> <b>.014</b>
No	1533 (98.0)	31 (2.0)			3347 (98.9)	37 (1.1)		

**Table 4.3** Testing the association between gender and providing injection initiation assistance for the first time among PWID in Tijuana, Mexico and Vancouver, Canada (Continued).

	Recent Provision of Injection Initiation Assistance							
	Tijuana				Vancouver			
	No n(%)	Yes n(%)	Univariable Hazard Ratio (95% CI) p-value	Multivariable Hazard Ratio (95% CI) p-value	No n(%)	Yes n(%)	Univariable Hazard Ratio (95% CI) p-value	Multivariable Hazard Ratio (95% CI) p-value
<i>Injection Heroin Use (Past 6 Months)</i>								
Yes	1233 (98.3)	21 (1.7)	0.82 (0.45-1.51) .531	--	1415 (96.9)	45 (3.1)	<b>2.88</b> <b>(1.84-4.51)</b> <b>&lt; .001</b>	<b>1.61</b> <b>(0.97-2.66)</b> <b>.066</b>
<i>Injection Cocaine Use (Past 6 Months)</i>								
Yes	18 (100)	0 (0)	--	--	682 (97.7)	16 (2.3)	1.47 (0.85-2.55) .167	--
No	2267 (98.2)	42 (1.8)			3644 (98.3)	62 (1.7)		
<i>Injection Meth Use (Past 6 Months)</i>								
Yes	201 (97.1)	6 (2.9)	1.74 (0.73-4.12) .211	--	979 (96.0)	41 (4.0)	<b>4.02</b> <b>(2.58-6.28)</b> <b>&lt; .001</b>	<b>1.65</b> <b>(0.99-2.74)</b> <b>.054</b>
No	2084 (98.3)	36 (1.7)			3347 (98.9)	37 (1.1)		
<i>Injection Speedball Use (Past 6 Months)</i>								
Yes	44 (95.6)	2 (4.4)	2.28 (0.55-9.45) .256	--	164 (95.9)	7 (4.1)	<b>2.61</b> <b>(1.02-5.68)</b> <b>.015</b>	<b>2.40</b> <b>(1.09-5.32)</b> <b>.031</b>
No	2241 (98.2)	40 (1.8)			4162 (98.3)	71 (1.7)		
<i>Sex Work (Past 6 Months)</i>								
Yes	395 (98.3)	7 (1.7)	1.01 (0.45-2.27) .981	--	327 (95.3)	16 (4.7)	<b>3.66</b> <b>(2.11-6.35)</b> <b>&lt; .001</b>	<b>1.97</b> <b>(1.08-3.61)</b> <b>.028</b>
No	2085 (98.4)	35 (1.6)			3999 (98.5)	62 (1.5)		

**Table 4.4:** Follow up analyses assessing the association between gender and factors associated with providing injection initiation assistance for the first time among PWID in Tijuana, Mexico and Vancouver, Canada.

	Gender							
	Tijuana				Vancouver			
	Men <i>n</i> (%)	Women <i>n</i> (%)	OR/ $\beta$ (95% CI) <b>p-value</b>	aOR/a $\beta$ (95% CI) <b>p-value</b>	Men <i>n</i> (%)	Women <i>n</i> (%)	OR (95% CI) <b>p-value</b>	aOR/a $\beta$ (95% CI) <b>p-value</b>
<i>Age:</i>	45.1	41.7	<b>3.95</b>	<b>3.89</b>	45.9	42.5	<b>3.40</b>	<b>3.65</b>
<i>Mean(SD)</i>	(17.7)	(22.7)	(3.24-4.67) <b>&lt; .001</b>	(3.11-4.68) <b>&lt; .001</b>	(13.1)	(11.8)	(2.63-4.17) <b>&lt; .001</b>	(2.92-4.38) <b>&lt; .001</b>
<i>Age of First Injection:</i>	20.6	22.4	<b>-1.83</b>	<b>-2.46</b>	23.6	21.6	<b>1.99</b>	<b>1.33</b>
<i>Mean(SD)</i>	(6.4)	(7.2)	(-2.36 - -1.29) <b>&lt; .001</b>	(-3.07- -1.86) <b>&lt; .001</b>	(9.9)	(7.5)	(1.43-2.55) <b>&lt; .001</b>	(0.72-1.94) <b>&lt; .001</b>
<i>Non-Injection Heroin Use (Past 6 Months)</i>			<b>1.62</b>	1.09			1.07	--
			(1.16-2.27) <b>.005</b>	(0.73-1.63) .676			(0.89-1.29) .472	
Yes	64	84			329	201		
	(5.1)	(7.9)			(11.8)	(12.5)		
No	1204	975			2467	1407		
	(94.9)	(92.1)			(88.2)	(87.5)		
<i>Non-Injection Meth Use (Past 6 Months)</i>			<b>2.25</b>	<b>1.32</b>			<b>0.87</b>	<b>0.79</b>
			(1.89-2.69) <b>&lt; .001</b>	(1.07-1.64) <b>.010</b>			(0.75-1.01) <b>.070</b>	(0.65-0.95) <b>.014</b>
Yes	313	450			672	348		
	(24.7)	(42.5)			(24.0)	(21.6)		
No	955	609			2124	1407		
	(75.3)	(57.5)			(76.0)	(87.5)		
<i>Injection Heroin Use (Past 6 Months)</i>			0.99	--			<b>1.49</b>	1.07
			(0.84-1.16) .888				(1.31-1.70) <b>&lt; .001</b>	(0.92-1.25) .374
Yes	685	569			835	625		
	(54.0)	(53.7)			(29.9)	(38.9)		
No	583	490			1961	983		
	(46.0)	(46.3)			(70.1)	(61.1)		
<i>Injection Meth Use (Past 6 Months)</i>			0.82	--			<b>0.84</b>	<b>0.52</b>
			(0.961-1.10) .179				(0.73-0.98) <b>.023</b>	(0.43-0.62) <b>&lt; .001</b>
Yes	122	85			693	350		
	(9.6)	(8.0)			(24.8)	(21.8)		
No	1146	974			2103	1258		
	(90.4)	(92.0)			(75.2)	(78.2)		

**Table 4.4:** Follow up analyses assessing the association between gender and factors associated with providing injection initiation assistance for the first time among PWID in Tijuana, Mexico and Vancouver, Canada (Continued).

	Gender							
	Tijuana				Vancouver			
	Men <i>n</i> (%)	Women <i>n</i> (%)	OR/ $\beta$ (95% CI) p-value	aOR/a $\beta$ (95% CI) p-value	Men <i>n</i> (%)	Women <i>n</i> (%)	OR (95% CI) p-value	aOR/a $\beta$ (95% CI) p-value
<i>Injection Speedball Use (Past 6 Months)</i>			--	--			<b>1.94</b> <b>(1.43-2.64)</b> <b>&lt; .001</b>	<b>1.91</b> <b>(1.36-2.68)</b> <b>&lt; .001</b>
Yes					82 (2.9)	89 (5.5)		
No					2714 (97.1)	1519 (94.5)		
<i>Sex Work (Past 6 Months)</i>			<b>27.95</b> <b>(18.33-42.63)</b> <b>&lt; .001</b>	<b>25.28</b> <b>(16.42-38.90)</b> <b>&lt; .001</b>			<b>10.17</b> <b>(7.61-13.59)</b> <b>&lt; .001</b>	<b>9.52</b> <b>(6.99-12.96)</b> <b>&lt; .001</b>
Yes	24 (1.7)	378 (33.1)			58 (2.1)	285 (17.7)		
No	1356 (98.3)	764 (66.9)			2738 (97.9)	1323 (82.3)		
	Men <i>n</i> (%)	Women <i>n</i> (%)	<i>X</i> <sup>2</sup> (df)*	p-value	Men <i>n</i> (%)	Women <i>n</i> (%)	<i>X</i> <sup>2</sup> (df)*	p-value
<i>Assisted a Man</i>								
Yes	25 (92.6)	13 (86.7)	0.39(1)	0.608	26 (55.3)	24 (77.4)	<b>3.96(1)</b>	<b>.047</b>
No	2 (7.4)	2 (13.3)			21 (44.7)	7 (22.6)		
<i>Assisted a Woman</i>							<b>7.45(1)</b>	<b>.006</b>
Yes	5 (18.5)	6 (40.0)	2.30(1)	0.158	30 (63.8)	10 (32.3)		
No	22 (81.5)	9 (60.0)			17 (36.2)	21 (67.7)		
<i>Assisted a Transgender Person</i>								
Yes	1 (3.7)	0 (0)	0.57(1)	0.643	2 (4.3)	3 (9.7)	0.92(1)	.381
No	26 (96.3)	15 (100)			45 (95.7)	28 (90.3)		

\*A Fisher's Exact test was employed when expected cell sizes were less than 5.

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## CHAPTER 5: DISCUSSION

### OVERVIEW

This dissertation sought to explore and elucidate the impact of gender on substance use stigma and injection drug use processes among PWUD. This was accomplished by achieving the following aims: (1) systematically reviewing the global scientific literature on the intersection of gender and substance use stigma, and how it impacts drug use trajectories (i.e., frequency of use, types of drugs used, drug misuse, and related drug risk behaviors [e.g., injection drug use, the provision of injection initiation assistance, etc.]), (2) using a mixed methods design, examining how gender influences the risk environment for an individual's provision of injection initiation assistance across three distinct North American settings (San Diego, USA, Vancouver, Canada, and Tijuana, Mexico), and (3) quantitatively assessing the association between gender and the provision of injection initiation assistance for the first time among PWID in: Tijuana, Mexico and Vancouver, Canada. This research serves to fill critical gaps in the literature regarding how gender shapes experiences of substance use-related stigma and the nature of injection initiation trajectories.

Three overarching conclusions can be drawn from these findings. First, as data from Chapter 2 demonstrate, PWUD experience intersectional gender- and substance use-related stigma across global geographic contexts. Secondly, as shown in Chapters 3 and 4, risk environments influencing injection initiation processes are significantly shaped by gender across North American contexts. Thirdly, as is shown in Chapter 3, the ways in which gendered risk environments produce injection initiation processes are likely bound by sociocultural norms specific to the geographic context in which they're situated. These findings highlight the need for intersectional, gender-responsive, and context-specific approaches to drug use research, prevention, and intervention efforts, described in the Implications section below.

In Chapter 2 (Aim 1), a total of 75 (Quantitative:  $n = 40$ ; Qualitative:  $n = 35$ ) articles were included in a systematic review of the global literature on the intersection of gender and substance use stigma. Of the 40 included quantitative articles, 27 (67.5%) assessed stigma from the interpersonal perspective, and 13 (32.5%) were from the individual perspective. Additionally, more than half (23; 57.5%) of the quantitative articles found no association between gender and substance use-related stigma. Of the 35 included qualitative articles, however, 7 (20%) assessed stigma from the interpersonal perspective, 28 (80%) were from the individual perspective, and nearly all (34; 97.1%) found that WWUD experience greater substance use-related stigma when compared to men who use drugs. The qualitative synthesis further revealed that WWUD's experiences of substance use-related stigma are shaped by societal expectations regarding women's morality, attractiveness, and roles as mothers, that WWUD experience distinct intersectional gender- and substance use-related stigma in health care settings, and that substance use-related stigma can be intertwined with gender-based violence for WWUD.

In Chapter 3 (Aim 2), data from a total of 2,622 PWID across three socio-geographic contexts, San Diego, USA ( $n = 352$ ), Vancouver, Canada ( $n = 1,739$ ), and Tijuana, Mexico ( $n = 531$ ) were assessed to determine the gender composition of, and characterize the gendered risk environments for, injection initiation events. Chi-square analyses demonstrated that there were greater proportions of male assisters, male assistees, and gender concordant pair types in Tijuana compared to Vancouver or San Diego. The qualitative analysis ( $n = 61$ ) highlighted that the spatial risk environment of jails/prisons likely contribute to the greater gender concordance in initiation pair types found in Tijuana, whereas the social risk environments of intimate partnerships in San Diego, and 'caring for others' in the face of an opioid overdose crisis in

Vancouver, are likely contributing to the greater gender discordance found in injection initiation events in those contexts.

Data were drawn from total of 596 and 1,392 PWID from the macro spatial risk environments of Tijuana, Mexico and Vancouver, Canada, respectively, and were analyzed within Chapter 4 (Aim 3) to assess the relationship between gender and providing injection initiation assistance for the first time among PWID who had reported never providing initiation assistance at baseline. The results demonstrated that, after controlling for age and age at first injection, WWID in Tijuana were nearly 50% less likely to have provided injection initiation assistance for the first time during the study period compared to MWID. There was no significant association, however, between gender and the provision of injection initiation assistance for the first time in Vancouver. Despite a lack of a significant association in Vancouver, however, post hoc analyses illustrated that the factors associated with providing initiation assistance for the first time in this geo-cultural setting (i.e., sex work and injection speedball use) are gendered in nature, with WWID more likely to engage in them than MWID. This provides further evidence for the influence of gender- and context-specific factors in injection initiation processes.

### **Gender-Responsive Stigma and Substance Use Process Model**

Taken together, the results of this dissertation provide strong support for the aforementioned theory integration and the development of the Gender-Responsive Stigma and Substance Use Process Model. Specifically, these dissertation findings support this new process model through its capacity to identify the way intersectional identities (i.e., gender- and drug use-related identities), formed through social processes, shape experiences with structural, interpersonal, and individual manifestations of stigma within integrated risk environments (i.e.,

policy, economic, social, and spatial). For example, the findings indicate that the intersectional identities of being a woman and being a PWUD shape experiences of discrimination within the spatial risk environment of health care settings.

Furthermore, the findings from this dissertation contribute to the development of the Gender-Responsive Stigma and Substance Use Process Model through the elucidation of gendered risk environments that, in addition to producing stigma, constrain the capacity of PWID to avoid providing injection initiation assistance. For example, this work identifies that economic constraints combined with the social risk environment of intimate partnerships likely contribute to the greater gender discordance in injection initiation events found in San Diego, USA. This indicates that the economic instability felt by WWID, the importance social support within broad contexts of vulnerability,<sup>1,2</sup> and the influence of intimate partners,<sup>1,3</sup> intersect to shape transitions into drug injecting in this setting. This dissertation work also identified the macro spatial environment of Tijuana as productive of gender differences in providing injection initiation assistance for the first time, with women being nearly half as likely to have provided initiation assistance for the first time in this geographic context. This is likely due to the existence of broad societal-level gender norms that moralize injection drug use among women, and prohibit WWID from providing injection initiation assistance in this geo-cultural setting.<sup>1,4</sup>

Additionally, the results of this dissertation support the development of this process model through the identification of individual processes, namely internalized stigma, that are produced by the integrated risk environments. For example, this systematic review identified that experiences of discrimination and gender-based violence for WWUD can subsequently lead to heightened levels of internalized stigma for this population.

The resulting Gender-Responsive Stigma and Substance Use Process Model, informed by the work in this dissertation, therefore provides a valuable roadmap for the development of future research and interventions targeting gendered stigma and injection drug use processes. Collectively, this work identifies potential areas for intervention when seeking to reduce substance use stigma- and injection-related harms. For example, the process model, informed by this dissertation work, identifies that the micro spatial risk environments of healthcare settings produce increased stigma for WWUD. As such, healthcare settings, and the professionals within these spaces, could serve as an important avenue for interventions seeking to prevent the downstream effects of substance use-related stigma for WWUD. Additionally, this dissertation work identified the macro spatial risk environment of Tijuana as productive of risk for providing injection initiation assistance among young MWID. Consequently, structural-level interventions (i.e., policies decriminalizing substance use and scaling up the availability of evidence-based treatments)<sup>5,6</sup> could be employed for MWID in this socio-geographic context to address injection initiation processes and related harms. Further, this work identifies important gaps in the existing literature that can guide future research. Specifically, more research is needed to fully understand the causal and temporal relationships between the constructs within this process model (e.g., internalized intersectional stigma, psychosocial mechanisms [i.e., depression, anxiety, and PTSD], and healthcare utilization). A full discussion of the gaps in the literature identified in this work, and directions for future research, is included in the Future Research section below.

## **IMPLICATIONS**

The results this current dissertation have important implications for the development of tailored substance use-related research and services. One main implication is that there is a need for intersectional approaches in substance use stigma- and injection drug use-related research and



interventions. Though past research has highlighted the heightened vulnerability of WWUD to violence, coercion, and injection-related harms,<sup>1-4</sup> as well as the barriers to care this population faces,<sup>5-7</sup> the review in Chapter 2 illuminated a critical lack of intersectionality within the quantitative measures of substance use-related stigma. At present, current quantitative measures of substance use-related stigma are not adequately designed to capture the unique experiences of WWUD with substance use stigma. As such, the experiences of WWUD are not accurately reflected in stigma research and, consequently, corresponding interventions are not designed to address the unique needs and concerns of this population. This ultimately serves to exacerbate stigma and related harms for WWUD. Indeed, this gap in the development of intersectional measures of substance use-related stigma in the extant literature could serve to perpetuate injection-related harms, such as infectious disease transmission, and barriers to accessing and utilizing care for WWUD.

Furthermore, the findings from this dissertation indicate that, globally, WWUD experience greater intersectional stigma based on their gender and their identity as a PWUD. Importantly, WWUD experience this intersectional gender- and substance use-related stigma and discrimination in health care settings, further perpetuating barriers to accessing necessary care.<sup>7</sup> These findings strongly suggest a need to develop interventions targeting substance use-related and intersectional stigma for WWUD. Specifically, it is recommended that existing interventions addressing HIV-related stigma among healthcare professionals, like the *Finding Respect and Ending Stigma around HIV* (FRESH) workshop,<sup>8</sup> be adapted to address intersectional gender- and substance use-related stigma within these healthcare settings. The FRESH workshop involves bringing together healthcare workers and people living with HIV (PLWH) in informational and stigma-reducing activities in order to reduce HIV-related stigma among

healthcare professionals and improve HIV stigma-related positive coping among PLWH.<sup>8</sup> Adapting this intervention to address intersectional gender- and substance use-related stigma among healthcare professionals will likely require that informational materials and workshop sessions take into account the ways societal gender roles and expectations affect how women navigate drug use, treatment, and structural-level consequences (e.g., incarceration and CPS involvement).<sup>8</sup> Relatedly, interventions like the peer-delivered, network-oriented HPTN 037 trial targeting injection drug use-related risk behaviors,<sup>9</sup> and gender-specific harm reduction efforts like SisterSpace,<sup>10</sup> have found increased efficacy for WWID in women-only injection drug use-related social networks.<sup>9,10</sup> In some qualitative accounts, WWUD have reported feeling less stigma and feeling safer when they are able to access services (e.g., SisterSpace) that are only for women and are specifically designed to address their unique needs and concerns.<sup>10</sup> Consequently, interventions aiming to reduce intersectional gender- and substance use-related stigma, and the downstream harms of this intersectional stigma, may be most effective in women-specific groups.

Another implication from the findings of the current dissertation is that there are gendered risk environments that produce injection drug use processes and trajectories, namely injection initiation events. The existing scientific literature has illustrated that there are gender differences in the progression of substance use disorders, the harms associated with substance misuse, and in PWID's own transitions into drug injecting.<sup>3,5,10-12</sup> For example, women who are substance dependent progress faster to medical consequences, like liver problems, than men, WWID are disproportionately impacted by infections like HIV and HCV, and WWUD are most often assisted into drug injecting by a male intimate partner or spouse.<sup>11-13</sup> Additionally, past research has demonstrated the effectiveness of gender-responsive substance use-related

education and interventions, like a pilot study that employed the *Helping Women Recover and Beyond Trauma* curricula to reduce post-release substance use among women in prison.<sup>14,15</sup>

Aligned with this research, the present dissertation elucidates that there are specific gendered risk environments (e.g., the spatial risk environment of jails/prisons for MWID in Tijuana, the social risk environment of intimate partnerships for WWID in San Diego, and the social risk environment of ‘caring for others’ for both MWID and WWID in Vancouver) in which the provision of injection initiation assistance may occur. As such, the findings of the current dissertation should serve to inform tailored, gender-specific intervention, treatment, and harm reduction efforts that better address transitions from non-injection to injection drug use.

For example, the social environment of intimate partnerships may produce gender discordant (i.e., male assister-female assistee or female-assister-male assistee) injection initiation events in San Diego. Consequently, existing behavioral interventions that effectively reduce transitions into drug injecting, like Change the Cycle<sup>15</sup> and Break the Cycle,<sup>16</sup> should draw on and incorporate techniques from existing intimate partner-based interventions aimed at reducing injection-related infectious disease transmission. Both Break the Cycle and Change the Cycle incorporate informational and training sessions that provide PWID with strategies to refuse requests for injection initiation;<sup>16,17</sup> and both intervention strategies have been associated with significant reductions in the frequency with which PWID provided injection initiation assistance.<sup>16,17</sup> Given the findings surrounding intimate partnerships in this dissertation, however, and past literature that has also found intimate partnerships can be an important source of support, care, and injection-related risk reduction among WWUD,<sup>2,18-20</sup> it is recommended that Break the Cycle and Change the Cycle<sup>16,17</sup> be adapted to include couple-focused intervention techniques. For example, interventions targeting injection-related risk behaviors within intimate

partnerships among PWUD in New York and Kazakhstan, like Project Connect II and Project Renaissance, were able to reduce infectious disease transmission risk through couple-focused role playing, communication building, and technical skill building sessions.<sup>19</sup> These techniques could, therefore, be incorporated into existing Break the Cycle or Change the Cycle<sup>16,17</sup> intervention programs and be applied to target transitions into drug injecting, particularly for injection-related intimate partnerships in San Diego, which could then serve to more effectively reduce injection-related epidemics in this geo-cultural context. Given the increased vulnerability of WWID to intimate partner violence,<sup>3,21</sup> however, couple-based approaches may not always be the safest or most appropriate intervention techniques for WWID in these settings. Due to the intertwining of economic risk environments with intimate partnerships for WWID in San Diego, and past literature demonstrating that having access to money or other financial resources is associated with a reduced risk of HIV-related risk behaviors for women,<sup>22,23</sup> it is further recommended that economic empowerment interventions be employed to help ameliorate the economic constraints that produce injection related processes and risks for WWID in this geographic setting.

Furthermore, the physical environment of prisons/jails may produce gender concordant (i.e., male assister-male assistee) injection initiation events in Tijuana. While there is evidence that gender-responsive substance use-focused interventions can be effective within incarcerated populations (i.e., the *Helping Women in Recovery and Beyond Trauma* curricula),<sup>14</sup> it is also acknowledged that structural-level interventions are likely needed in this context. For example, in 2012 the narcomenudeo drug policy reform was enacted in Tijuana, thereby decriminalizing the possession of small amounts of drugs and diverting PWUD from incarceration into substance dependence services. Research evaluating this policy, however, has found that this policy change

has not been implemented effectively or consistently, especially for MWID and other street-based PWID populations, subsequently limiting the corresponding public health benefits.<sup>5,24</sup> Given the findings of this dissertation, and existing research highlighting that law enforcement interactions and incarceration are associated with increased risk of providing injection initiation assistance,<sup>25,26</sup> and that MWID are more at risk for law enforcement interactions within Tijuana,<sup>27</sup> there is a need for effective policy that successfully depenalizes substance use and refers PWID, particularly MWID, into evidence-based care, like opioid agonist treatment (OAT). Additionally, structural-level barriers to accessing OAT, like the cost of this treatment, police bribery, and the limited number of OAT clinics, will need to be addressed for the benefits of this policy reform to be fully realized.<sup>28,29</sup> Additionally, in order to ensure that WWID have a gender-responsive option in which they can safely access OAT services in an environment free from intersectional stigma or gender-based violence, efforts to reduce barriers to accessing OAT will likely need to include a women-specific space.<sup>9,10</sup> Effectively implementing this structural-level policy and reducing barriers to OAT services could serve to divert PWID away from the gender-concordant spatial risk environments of prisons and jails and into evidence-based care, which could reduce downstream injection drug use processes (i.e., the provision of injection initiation assistance) and related harms, especially for younger MWID in this setting.

Additionally, the social risk environment of ‘caring for others’ in the context of an opioid overdose epidemic may produce gender discordant injection initiation events in Vancouver. Given the impact of the opioid overdose epidemic in these contexts,<sup>23-26</sup> and that the overdose crisis shapes gendered norms and constrains MWID’s and WWID’s choices surrounding providing injection initiation assistance in Vancouver, it is recommended that evidence-based treatments, like OAT, be scaled up in these settings. Previous PRIMER research has

demonstrated OAT can be effective in reducing the provision of injection initiation assistance in both San Diego and Vancouver.<sup>27,28</sup> This is likely due to both the socially communicable nature of injection drug use and to the ability of OAT to reduce withdrawal symptoms among PWID.<sup>29,30</sup> Past research has found that PWID are at greatest risk of requests for initiation assistance when injecting in front of injection-naïve individuals,<sup>31</sup> and that agreeing to these requests often occurs when PWID are experiencing withdrawal symptoms.<sup>32</sup> OAT serves to limit both public injecting, where PWID may encounter novice PWID, and to alleviate symptoms of withdrawal,<sup>29,30</sup> which could protect against requests for injection initiation assistance. Additionally, OAT serves to eliminate any potential economic incentive for providing injection initiation assistance by reducing the requisite drug seeking, purchasing, and consumption PWID engage in to avoid withdrawal.<sup>30,31</sup> As was previously discussed, however, in order for the scale up of OAT to be effective for both MWID and WWID, women-specific OAT services will need to be employed in conjunction with the other pre-existing mixed-gender options. In qualitative research on the experiences of WWID with SisterSpace, Vancouver's women-specific SIF, providing women-specific harm reduction spaces allows WWID to have greater autonomy over their injecting behaviors and provides an environment in which WWID feel safe from both the threat of violence and the gendered social norms surrounding drug use.<sup>9,10</sup> This indicates that successful treatment of opioid use disorders, including the scale up of OAT and the prioritization of women-specific treatment spaces, can potentially reduce transitions into drug injecting and the corresponding opioid- and injection-related behavioral epidemics for populations in Vancouver.<sup>33</sup>

## LIMITATIONS

This dissertation has numerous strengths, including a rigorous systematic review of scientific literature from around the globe, the incorporation of multiple methodological approaches (i.e., quantitative, qualitative, and mixed methods), data from relatively large samples of hard to reach populations of PWID, and the use of comparable questionnaires across the distinct socio-geographic contexts of San Diego, USA, Vancouver, Canada, and Tijuana, Mexico. However, it also has limitations consistent with these approaches that must be recognized. A full discussion of the primary limitations of the present work is included below.

### **Self-report**

The issue of substance use, both reported within past literature and investigated within PRIMER, is sensitive in nature, and the reliance on self-report could lead to the underreporting of substance use behaviors.<sup>32,33</sup> Relatedly, it is possible that, due to differences in social norms across contexts, stigmatized behaviors such as substance use and providing injection initiation assistance were differentially reported across contexts. In an effort to mitigate the potential for social desirability bias, participants within PRIMER were informed of the confidential nature of the study and qualitative interviews were performed by investigators with experience establishing rapport and conducting research with substance using populations. Further, data for each cohort were analyzed separately to protect against any potential misclassification bias and measurement error that would result from the pooling of data from differing socio-cultural contexts. In addition, though past research has found that the underreporting of substance use behaviors due to social desirability bias is common, rates of underreporting have been found to be lower among PWID populations in studies of drug use.<sup>32-35</sup>

## **Comparability**

It is also likely that the data collected across sites (i.e., San Diego, USA, Tijuana, Mexico, & Vancouver, Canada) are not directly comparable. The differences in drug policy, law enforcement, harm reduction efforts, and social norms in these contexts could have impeded the comparisons of the PWID sampled. For example, given the impact of the opioid overdose crisis on the gendered norms surrounding providing injection initiation assistance among PWID in Vancouver,<sup>36</sup> as well as the societal norms proscribing WWID from providing injection initiation assistance in Tijuana,<sup>1</sup> the visibility of PWID and their participation in PRIMER could have been impacted in these settings. As such, it is possible that the characteristics of the PWID recruited in each of these sites differ in important ways that limit the direct comparison of these groups. To date, however, a series of studies have been undertaken across these sites,<sup>1,25,30,36-40</sup> and the PRIMER team, to which I have contributed substantial and novel contributions, has worked together to maximize the comparability of participants for the current dissertation.

## **Generalizability**

Non-probability sampling was used in the recruitment of participants by all cohorts that provided data for this study. Without the use of probability sampling techniques, it is difficult to ensure that the pooled sample of PWID obtained is representative of the overall target populations.<sup>41</sup> We also note that the target populations of interest are mobile and difficult to access, particularly in Tijuana, where PWID face a multitude of vulnerabilities related to violence, scarce evidence-based drug treatment services, and punitive policing practices that contradict with existing drug policies (i.e., narcomenudeo).<sup>27,42-45</sup> Given this potential limitation, descriptive analyses were conducted across all cohorts to assess for comparability, and participants were found to have similar demographic characteristics compared to samples of



PWID from similar studies of injection initiation provision. For example, recent research with other North American-based cohorts of PWID from West Virginia and California (Los Angeles and San Francisco) have recruited samples in which the proportion of WWID ranges from 24% to 38.8%,<sup>46-48</sup> echoing past research estimating WWID comprise roughly a quarter to a third of PWID populations in North America.<sup>49-52</sup> The proportions of WWID recruited for the PRIMER cohorts were 27.8% (San Diego), 38.6% (Tijuana), and 35.7% (Vancouver); all of which fall within the proportional ranges reported in comparable research.

### **Attrition**

Due to the use of a longitudinal design, and the mobile nature of the population of interest, attrition was a potential limitation for the Chapter 4 (Aim 3) analyses. In an effort to assess for potential bias introduced from attrition, the baseline sociodemographic characteristics of the participants retained in the study were compared to the characteristics of participants at each follow-up time point. There were no significant differences in the gender composition of the samples across study time points, but there were significant differences in age. Those participants who were retained across all timepoints were significantly older when compared to participants at baseline in both Tijuana and Vancouver, indicating there may be a potential age bias in the analyses. Given the association between younger age and the provision of injection initiation assistance,<sup>53</sup> it is possible that those most likely to provide injection initiation assistance were lost to follow up. Consequently, this indicates that our outcome of interest, the provision of injection initiation assistance for the first time, is likely underestimated.

### **Sample Size**

For the Chapter 3 (Aim 2) analyses, the number of people that reported providing injection initiation assistance in the past six months, and reported the gender of those they aided

in initiating, was relatively small ( $n = 110$ ). Consequently, this limited the statistical power and made certain multivariable analyses infeasible. The use of a mixed methods approach, however, allowed for the quantitative findings to be explored in greater depth through qualitative methods.<sup>54</sup> Additionally, the qualitative data collected through PRIMER were rich, and the complexity of the gendered risk environments for IDU initiation events were able to be fully explored.

## **Literature**

Lastly, the Chapter 2 (Aim 1) systematic review was limited in that only articles in English were analyzed as a result of study team member language limitations, which potentially resulted in the oversampling of research from North America, Western Europe, and Australia. A total of 35 articles were excluded for not being in English; 10 (28.6%) were in Spanish, 9 (25.7%) in German, 6 (17.1%) in French, 2 (5.7%) in Chinese, 2 (5.7%) in Japanese, 2 (5.7%) in Dutch, 2 (5.7%) in Swedish, 1 (2.9%) in Greek, and 1 (2.9%) in Portuguese. Despite the fact that the majority of the included and excluded work came from North America, Western Europe, and Australia, the exclusion of these articles could have potentially biased our findings. Additionally, the lack of a consensus on the definition of stigma, the use of multiple stigma measures, and the omission of sample characteristics limited the robustness of the findings from this systematic review. The review, however, serves to expose existing gaps in the literature and is a useful guide for future research.

## **FUTURE RESEARCH**

In addition to the need for gender-responsive and intersectional substance use-related interventions and drug treatment services, there is a need for intersectional and gender-specific approaches in future substance use- and stigma-related research. Specifically, future research

should develop intersectional measures of substance use-related stigma to more accurately evaluate gender differences in experiences of this form of stigma and, subsequently, better account for the gendered disparities in drug use-related harms observed in the extant literature.<sup>3,12,13,55,56</sup> As of now, the plethora of quantitative measures that assess substance use stigma are not specifically designed to capture the nuanced experiences of WWUD experiencing this stigma. In order to develop targeted services for underserved populations of PWUD, like WWUD, reliable and valid intersectional measures need to be developed and utilized.

Furthermore, additional research is needed to better assess the impact of intersectional stigma on drug use-related outcomes (e.g., drug misuse, injection drug use, and providing injection initiation assistance]). Of the 40 quantitative articles that met inclusion criteria for the systematic review presented in the current dissertation, none tested the moderating effect of gender on the relationship between substance use-related stigma and drug use-related outcomes. While some qualitative research has explored how intersectional gender- and substance use-related stigma has shaped experiences with accessing health care services and psychological well-being,<sup>57-61</sup> there is a critical gap in the quantitative literature regarding how this intersectional stigma impacts drug use trajectories, including injection drug use-related risk behaviors. Specifically, it is recommended that the impact of intersectional gender- and substance use-related stigma on injection drug use frequency and injection drug use risk behaviors be investigated.

Future research is also needed to fully assess the utility of the Gender-Responsive Stigma and Substance Use Process Model. While evidence from this dissertation provides support for this theory integration, additional research is needed to fully evaluate the temporal relationships between the integrated risk environments (i.e., policy, economic, social, and spatial risk

environments) and the individual processes (i.e., internalized stigma, psychosocial mechanisms, and injection drug use initiation processes). Additionally, though past research has identified that experiences with substance use-related stigma negatively impacts psychological health, and acts as a barrier to accessing and utilization health care,<sup>62,63</sup> the moderating effect of gender on the relationship between substance use-related stigma, across the integrated risk environments, and the individual processes of depression, anxiety, PTSD, and treatment access and utilization has not been investigated. As such, research is needed to fully elucidate and explore the relationship(s) between the intersectional identities related to gender and substance use, the integrated risk environments, and each of the aforementioned individual processes. Further, additional research will be needed to quantitatively test the relationships, and identify the directionality of those relationships, between each of the individual process constructs (e.g., testing the relationship between internalized stigma and the psychosocial mechanisms of depression, anxiety, and PTSD). Lastly, further research is needed to quantitatively assess the degree and direction of the association between injection drug use processes (i.e., the provision of injection drug use initiation and internalized stigma).

Future research is critical for refinement of this integrated process model, and could, in turn, guide the development of theoretically derived, intersectional, and gender-specific intervention efforts (i.e., an adapted Break the Cycle injection drug use initiation intervention or an adapted FRESH workshop stigma intervention)<sup>8,16,17</sup> aimed at reducing injection drug use- and stigma-related harms for WWUD. Additionally, research is needed to assess the feasibility, acceptability, and effectiveness of adapting these behavioral interventions targeting stigma and transitions into drug injecting among MWID and WWID across geographic contexts. For example, studies are needed to assess whether adapting Break the Cycle and Change the Cycle

programs<sup>16,17</sup> to include couple-focused intervention-techniques are acceptable, feasible, and effective for WWID within San Diego, USA. Furthermore, studies are needed to evaluate whether adapting existing HIV-stigma interventions (i.e., FRESH workshops)<sup>8</sup> to address intersectional gender- and substance use-related stigma within healthcare settings are acceptable and effective at reducing this intersectional stigma for WWUD across geographic contexts.

Lastly, research is needed to assess whether structural-level interventions aimed at decriminalizing the possession of substances and diverting PWID into evidence-based care could be effective in reducing the provision of injection initiation assistance among young MWID in Tijuana Mexico. This socio-geographic region has wide variability in drug treatment and recovery services, ranging from non-evidence-based drug treatment and recovery services (i.e., involuntary drug treatment and abstinence-based recovery services) to evidence-based harm reduction efforts like OAT.<sup>29,64,65</sup> Furthermore, there are a number of micro and macro policy risk environment factors (i.e., the ineffective implementation of narcomenudeo policy, punitive policing practices, structural barriers to OAT, etc.) that influence injection drug use trajectories outside of the factors identified in the current dissertation.<sup>5,27,28,44,49,66</sup> As such, future research should seek to identify if structural-level interventions, like the decriminalization of drug possession and the scale up of OAT services, could effectively reduce injection initiation processes among MWID in this setting.

## **CONCLUSIONS**

This dissertation makes a number of novel contributions to the scientific literature on intersectional stigma and trajectories into injection drug use. First, it synthesizes for the first time the impact of gender on substance use-related stigma and injection initiation processes across geographic contexts. This dissertation is the first to indicate that women who use drugs'

experiences with substance use-related stigma are shaped by gendered social norms, that MWID in Tijuana are more likely to have recently provided injection initiation assistance to other men (i.e., in MM initiation pairs) and to have provided initiation assistance for the first time. Further, this dissertation is the first to explore how the social risk environments of intimate partnerships and ‘caring for others’ in the context of an opioid overdose epidemic for MWID and WWID can potentially supersede gendered social norms and influence gender discordant injection initiation events in San Diego, USA and Vancouver, Canada.

These results highlight the need for intersectional, gender-responsive, and context-specific approaches within substance use- and stigma-related research and intervention efforts. Furthermore, developing tailored and theoretically derived interventions could serve to reduce stigma- and injection-related harms for underserved populations of PWUD, including WWUD.

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