

Medical Provider *Habitus*, Practice, and Care of People Living with HIV and Substance Use

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# ABSTRACT

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Despite significant medical advances in HIV treatment, people living with HIV and substance use (PLWH-SU) remain left behind. Compared to people living with HIV (PLWH) without comorbid substance use, PLWH-SU are less likely to engage in medical care and to achieve viral suppression. As a result, PLWH-SU have more frequent preventable hospitalizations, higher rates of viral transmission, and greater morbidity and mortality. Although there is extensive research that explores ways to enhance PLWH-SU's engagement in HIV care by improving patient-provider interactions, most have focused on the patient, and none have been effective. Grounded in the sociological theory of *habitus*, this dissertation attended to the medical provider in the patient-provider dyad and aimed to better understand how medical providers' perceptions and dispositions towards PLWH-SU are formed, and how these perceptions and dispositions are displayed in the ways medical providers interact with and take care of PLWH-SU. Before engaging with *habitus*, I first conducted a systematic review on how the theory has been used to study medical providers' clinical practices. Results of the review show that while existing literature has been limited and unclear in its usage of *habitus*, these studies are informative, and they demonstrate that *habitus* can be a suitable theoretical foundation for expanding present approaches to research on medical providers' clinical interactions with PLWH-SU. Following the systematic review, I developed my conceptual framework of medical providers' *treatment*

*habitus* (i.e., medical providers' dispositions towards caring for PLWH-SU) and estimated a typology of *treatment habitus* using survey data from 258 medical providers in Miami, Florida, Atlanta, Georgia, and the District of Columbia. My analyses show that among this sample of medical providers, there are four types of *treatment habitus* towards caring for PLWH-SU, and *treatment habitus* is associated with multi-level factors (e.g., providers' race, study site, receipt of substance use disorder training). To further explore how medical providers came to develop and how they understand their own *treatment habitus*, I conducted conversational interviews with 36 medical providers who had completed the abovementioned survey. These interviews revealed medical providers exhibit a spectrum of *treatment habitus* that is distinguishable by their intentions (person-centered vs. provider-centered) and their methods (informative vs. directive). The interviews also revealed that there are discrepancies in how medical providers spoke about PLWH-SU and how they described their practices towards caring for PLWH-SU. Specifically, although most providers used negative terms to refer to PLWH-SU, the stigmatizing language was almost never accompanied by recollections of stigmatizing behaviors during clinical interactions with PLWH-SU. Taken together, this dissertation expanded on current knowledge about not only how medical providers act when caring for PLWH-SU, but also why they act the ways they do. Findings from this study contribute to an understudied area of HIV and substance use research and provide insights for the development of novel provider-based interventions that can improve the health of this vulnerable and marginalized population.

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*To:*

*The paths yet to be taken*

*The challenges yet to be overcome*

*The lessons yet to be learned*

# CHAPTER 1

## Introduction

### **BACKGROUND and SIGNIFICANCE**

There are approximately 1.2 million people living with HIV (PLWH) in the United States (U.S.) and up to 50% are living with comorbid substance use [1-3]. Along virtually every step of the HIV Care Continuum, people living with HIV and substance use (i.e., people who use illicit opioids, stimulants, and/or are heavy alcohol consumers; PLWH-SU) are falling behind and not benefitting from advances in HIV treatment [4-7].

In terms of HIV testing and diagnosis, a study with 10,117 people who inject drugs in 20 cities across the U.S. found that only 64% of those who tested positive for HIV were aware of their infection status [8]; this is compared to 85% among all PLWH nationally [9]. In terms of linkage to and retention in medical care, a study in 12 clinics across the U.S. found that PLWH who inject drugs were 50% less likely than PLWH who do not use substances to initiate outpatient care [10]. Another study with more than 4,500 PLWH receiving care at a large HIV primary care facility found that PLWH who inject drugs were 1.2 times more at risk of not being retained in care than PLWH who do not use substances [11].

Besides not entering and/or not remaining in medical care, PLWH-SU who are in care also have worse health outcomes. For example, in a cohort of 528 PLWH who inject drugs in Baltimore,

approximately 32% were not prescribed antiretroviral therapy (ART) [12]. Furthermore, study participants who reported frequent injection drug use were 35% less likely to be initiated on ART than participants who reported intermittent injection drug use, and 54% less likely than those who reported no current injection drug use. Although current national guidelines strongly recommend same-day initiation of ART for all PLWH [13], deferral of ART prescription for PLWH-SU remains a critical issue. The most recent study from 2018 found that among 23 HIV medical providers in Houston, Texas, 34% stated they would delay ART for clinically eligible PLWH because of substance use and/or mental health issues [14]. And a 2015 study of 625 HIV care providers in 582 outpatient facilities across the U.S. found 35% of providers cited substance use as a reason for delaying ART to medically eligible PLWH [15].

PLWH-SU experience poor ART adherence even when they are prescribed ART. Additional analyses with the aforementioned Baltimore cohort found that among the PLWH who inject drugs who were prescribed ART, 78% experienced at least one instance of non-structured treatment interruption, and 20% of those who stopped never restarted [16]. As a result of varying combinations of not being aware of their infection status, not being engaged in medical care, not being prescribed ART, and not being able to adhere to ART, PLWH-SU have lower rates of viral suppression [17]. Moreover, they also experience more frequent preventable hospitalizations [18,19], greater viral transmission [3,20], and higher mortality [21,22].

Given the significant disparities experienced by PLWH-SU, numerous interventions have attempted to improve the health outcomes of this population, such as direct observation therapy [23,24], education and counseling [25,26], and patient navigation [27,28]. However, these

strategies have either shown no positive effects, positive effects that were short-lived, or sustained positive effects that did not reach the benchmark standards set forth by the U.S. National HIV/AIDS Strategy [29]. In a study with 66 PLWH-SU in San Diego, California, personalized, bidirectional text messaging was able to reduce the number of days of methamphetamine use among participants but did not significantly improve ART adherence or rates of viral suppression [30]. And among 55 PLWH-SU on ART in Connecticut, medication adherence training alone did not improve adherence, and medication adherence training with cash incentive only improved adherence for 8 weeks [31]. Lastly, in a multisite randomized controlled trial, patient navigation with or without financial incentives did not significantly improve viral suppression rates among 801 PLWH-SU over a 12-month period [27].

A complement to patient-based interventions that has been less extensively researched is interventions with medical providers, specifically those aimed at enhancing clinical interactions between providers and PLWH-SU. Medical providers play a central role in HIV care and studies have shown that their stigmatizing attitudes towards HIV and substance use are associated with delayed ART initiation, poor ART adherence, and treatment dropout [32-36]. In a 2013 survey with 479 PLWH and PLWH-SU receiving HIV care in Louisiana, patients were more likely to report disruptions in medical care if they perceived that a healthcare provider had been uncomfortable interacting with them, if they realized a healthcare provider had tried to avoid treating them, and/or if they have had a healthcare provider refuse to treat them [37]. In contrast to negative encounters, positive interactions between PLWH and their medical providers are associated with improved retention in care and better ART adherence [38-40]. Among 1,363 PLWH and PLWH-SU at a clinic in Baltimore, patients who felt their providers treated them

with respect and dignity, who listened to them carefully, and who explained medical information in ways they can understand attended significantly more of their medical appointments [41].

Strengthening clinical interactions through improving providers' perceptions of and practices towards PLWH-SU can be a promising way to improve health outcomes; however, existing approaches have rarely been implemented and have been found to be mostly ineffective. For example, a review of 31 studies found that while substance use education can improve physicians' perceived knowledge and skills regarding patient substance use management, improvement in practices was not consistently observed. Furthermore, education programs were seldom able to improve physicians' attitudes about substance use or substance users [42].

The lack of meaningful results with provider-based interventions can be attributable to two reasons. First, interventions have focused on increasing providers' knowledge about HIV and substance use or relied on providers following established "best practices." This limited focus prioritizes cognitive knowledge as the primary factor influencing how medical providers care for patients (i.e., providers with more extensive knowledge will always choose the best care for PLWH-SU). Second, interventions have focused on changing medical providers individually and assuming that patient-provider encounters take place in a vacuum. This disregards the possible influences of external factors such as workplace resources and policies, and the potential cross-over between medical providers' personal and professional lives [43,44].

As such, new ways of understanding medical providers' practices towards PLWH-SU is necessary in order to inform the development of potentially more effective interventions. One



promising approach is through the use of social theories, which has supported new ways of conceptualizing existing public health research questions. By basing public health studies on social theories, researchers have been able to generalize findings, and through the process of questioning, testing and refining, been able to build new intellectual frameworks to inform future studies [45,46]. Specifically related to this dissertation is sociologist Pierre Bourdieu's theory of *habitus* [47], which was conceptualized to understand individuals' dispositions. This theory can be a useful foundation for exploring how medical providers develop their perceptions of PLWH-SU, and how such perceptions are shown in providers' practices during clinical encounters.

## **OVERVIEW OF DISSERTATION**

The overarching objective of this dissertation is to better understand how medical providers' perceptions and dispositions towards PLWH-SU are formed, and how these perceptions and dispositions are expressed in the ways medical providers take care of PLWH-SU. Based on Bourdieu's theory of *habitus* [47], I employed quantitative and qualitative methods in a sequential explanatory design [48] to (1) introduce the concept of *treatment habitus*; (2) identify the multi-level (e.g., individual, organizational, structural) factors associated with medical providers' *treatment habitus* (Aim 1); (3) describe how medical providers perceive their own ways of caring for PLWH-SU (Aim 2); and (4) discuss the usability of *habitus* as a theoretical foundation for research regarding medical provider practices (Aim 3). This dissertation used both secondary and primary data. First, I used data collected as part of "Project RETAIN: Providing Integrated HIV Care for HIV-infected Crack Cocaine Users" (R01DA032098; PIs: Metsch & del Rio). Specifically, I analyzed a cross-sectional survey that was administered to 258 medical

providers in Miami, Florida, Atlanta, Georgia, and the District of Columbia about their attitudes, beliefs, and practices related to the treatment and care of PLWH and PLWH-SU. Second, I conducted conversational interviews with a purposive sample of 36 medical providers, distributed equally among the three cities, who had completed the Project RETAIN survey.

This dissertation is separated into five chapters: an introduction, a comprehensive literature review, a quantitative analytical paper written in publishable format, a qualitative analytical paper written in publishable format, and a conclusion that summarizes and integrates the findings of this dissertation. Following this introductory chapter, Chapter 2 presents a systematic review aimed to explore how Bourdieu's *habitus* has been used to study medical providers' clinical practices, and to evaluate whether *habitus* can be a useful tool for gaining a more nuanced understanding of medical providers' practices in treating PLWH-SU. In Chapter 3, I first introduce the idea of *treatment habitus* and my conceptual framework for how providers' *treatment habitus* is formed. Next, I use secondary data from the Project RETAIN provider survey to achieve three analytical objectives: to estimate a typology of *treatment habitus* among the sample of medical providers who completed the survey; to identify predictors that are associated with my typology; and to assess whether medical providers' *treatment habitus* is associated with their practices. Chapter 4 brings together the quantitative and qualitative as I use findings from my conversational interviews with medical providers to compare and further explain the results from the previous chapter. Additionally, I present other factors that providers expressed as playing a role in how they care for PLWH-SU (and PLWH more broadly) that were not captured in the survey. In the last chapter (Chapter 5), I summarize my findings, discuss the implications of my research, particularly the usability of *habitus*, reflect on my study design, and

provide some recommendations on future directions. Altogether, my dissertation expands on current knowledge about medical providers' dispositions and practices when caring for PLWH-SU. The findings contribute to an understudied area of HIV and substance use research and can help to inform future studies and the development of novel provider-based interventions.

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## CHAPTER 2

Healthcare and *Habitus*: A Systematic Review of Pierre Bourdieu's

Theory in Studying Clinical Practices

### ABSTRACT

**Objective:** This review aimed to explore how Pierre Bourdieu's theory of *habitus* has been used to study medical providers' clinical practices and to evaluate whether *habitus* can be a useful tool for gaining a more nuanced understanding of providers' dispositions and practices in order to improve the clinical outcomes of people living with HIV and substance use (PLWH-SU).

**Methods:** Following PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, I systematically reviewed primary empirical research published between January 1990 and May 2019 from PubMed, EMBASE, Web of Science, ProQuest Social Sciences, and ProQuest Sociology. Included studies explicitly stated the use of *habitus* to inform examinations of medication providers' clinical practices, defined as any practices that can affect patient care as primary outcomes. **Results:** A total of 517 publications were identified, and 14 were eligible and included for data extraction and synthesis. Most of the 14 studies were conducted in Europe (n=6) or North America (n=5) in hospitals with nurses; only three studies involved physicians. All studies interpreted *habitus* differently and many did not clearly explain how the theory was applied to the conduct of the study. **Conclusion:** Current research with medical providers using *habitus* has been limited and unclear. However, findings from studies do provide useful information and show how *habitus* can be used as a theoretical foundation for



expanding present approaches to research on medical providers' clinical interactions with their patients who are living with HIV and substance use.

## **INTRODUCTION**

People living with HIV and substance use (PLWH-SU) are trailing behind people living with HIV who do not use substances along the HIV Care Continuum [1-4]. Fewer PLWH-SU are aware of their serostatus [5], engaged in medical care [6], retained in medical care in the long term and prescribed antiretroviral therapy (ART) [7], and virally suppressed [8,9]. As a result of these shortcomings, PLWH-SU have worse health outcomes such as more frequent hospitalizations [10], higher rates of transmission [11], and overall shorter life expectancy [12].

PLWH-SU account for up to one-half of the 1.2 million people living with HIV in the United States (U.S.), a proportion that is growing as a result of the opioid epidemic [13-15]. Starting in 2002, the misuse of prescription opioids has led to a large increase in the number of people addicted to opioids and the number of people who transitioned from ingesting opioids to injecting opioids, heroin, and/or fentanyl [16]. This public health crisis has led to at least four HIV outbreaks among people who injected drugs in Scott County, Indiana, Cabell County, West Virginia, Middlesex and Essex Counties, Massachusetts, and King County, Washington [17]. According to the Centers for Disease Control and Prevention, new HIV infections attributable to injection drug use, which is the most efficient way that substance use can contribute to HIV infection, increased by 4% between 2014-2018 [18]. As the number of substance use-related

HIV infections increase, so will disparities in health outcomes for this vulnerable and marginalized population if sustainable and effective interventions are not put into place.

Medical providers play a central role in supporting PLWH-SU through the HIV Continuum of Care to minimize morbidity and mortality [19]. However, PLWH-SU have often experienced negative and stigmatizing clinical encounters with their providers, which research has shown has been associated with deferred ART prescription, sub-optimal engagement in care, and treatment drop-out [20-23]. Although there have been interventions designed to improve medical providers' treatment of PLWH-SU, these have not been meaningfully effective. A review of 31 studies found that while substance use education can improve physicians' perceived knowledge and skills regarding substance use management, improvement in practices were not consistently observed and these education programs were seldom able to improve physicians' attitudes about substance use or substance users [24]. The lack of meaningful results can potentially be attributable to the focus on changing practices rather than attitudes and perceptions. It is also possible that the lack of meaningful results is attributable to these strategies neglecting the possible influences of external factors such as workplace resources and policies, and the potential cross-over between providers' personal lives and their professional responsibilities [25,26].

New ways of understanding of how medical providers develop their perceptions of PLWH-SU and how such perceptions are translated into practices during clinical encounters is necessary to inform the development of novel and potentially more effective interventions. One promising approach is through the use of social theories, particularly Pierre Bourdieu's theory of *habitus*, which was conceptualized specifically to understand individual dispositions. The objectives of

this review are to systematically identify and evaluate evidence on how *habitus* has been used in studies of medical providers' practices, and to determine whether *habitus* can be appropriate for studying medical providers' dispositions and practices when caring for PLWH-SU.

## METHODS

### *Search Strategy*

Following the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines [27], I performed a literature search in June 2019 using the following five databases: PubMed, EMBASE, Web of Science, ProQuest Social Sciences, and ProQuest Sociology. The choice to use PubMed, EMBASE, and Web of Science was based on a recent review of published systematic reviews that identified these databases as part of the optimal combination of databases to maximize literature recall [28]. I added the ProQuest databases because, as a sociological concept, it is possible for works using *habitus*, even when health-related, to not be indexed in the three aforementioned health and medical databases identified by the review.

I searched for peer-reviewed journal articles published in English between 01/01/1990 and 05/31/2019 (the most recent completed month prior to the literature search) using the following key terms: Bourdieu, *habitus*, physician, doctor, clinician, nurse, pharmacist, practitioner, psychologist, and therapist (**Table 2.1**). I chose this particular time frame in order to maximize the number of relevant articles being recalled. And although Bourdieu first wrote about *habitus*

in the 1970s, a search in each of the five databases using only the key term “*habitus*” without time restrictions did not yield any results published prior to 1990. The key terms “Bourdieu” and

**Table 2.1** Overview of literature search strategy

Search #	Search Term(s)
1	Bourdieu
2	Habitus
3	Physician OR doctor OR clinician OR nurse OR pharmacist OR provider OR practitioner OR psychologist OR therapist
4	#1 AND #2 AND #3

“*habitus*” were linked using the AND operator in order to avoid articles published on body habitus, which is a medical concept used to describe the physical characteristics of individuals, such as their physique, general bearing, and body build [29]. In addition to the database searches, I reviewed the bibliographies of studies included for full-text review for additional citations.

### *Inclusion Criteria*

In addition to being published in a peer-reviewed journal in English during the specified time period, articles were selected if they were original empirical research articles, if the full texts were available, if the author(s) explicitly stated the use of *habitus*, and if the primary objective of the study was to examine the clinical practices of medical providers. To ensure that I was capturing as much of the published literature as possible, I expanded my definition of clinical

practice to mean any practices that can affect patient care, even if indirectly (e.g., a mid-level provider overseeing the work of student providers).

### *Selection of Studies and Quality Assessment*

I added all identified articles to EndNote X9.2 [30] where duplicate records were reviewed and removed. I then uploaded the unique records into Covidence, an online systematic review management platform [31], where I screened the titles and abstracts for eligibility. I retrieved the full texts of eligible articles and further assessed them to confirm that they met all of the inclusion criteria. Finally, I assessed each of the studies for their quality.

Since all of the included studies used qualitative methods, I performed the quality assessments using the CASP (Critical Appraisal Skills Program) Qualitative Checklist [32]. The CASP Qualitative Checklist has 10 items and appraises the following: the rigor of a study's methods, whether a study's results are valid, and how a study's results contribute to existing knowledge and understanding of a particular topic. For this review, an item was marked "yes" if it is discussed adequately in the full text, "no" if it is not adequately discussed in the full text, "not reported" if it is not addressed by the author(s) in the full text, and "not applicable" if it does not apply to the study (**Table 2.2**). I calculated scores for each included study as a percentage of the number of items marked "yes" divided by the total number of applicable items (i.e., 10 minus number of "not applicable" items). Studies scoring at least 80% were considered "good" quality; studies scoring 50% to 79% were considered "fair" quality; and studies scoring less than 50% were considered "poor" quality and excluded from data extraction and synthesis.

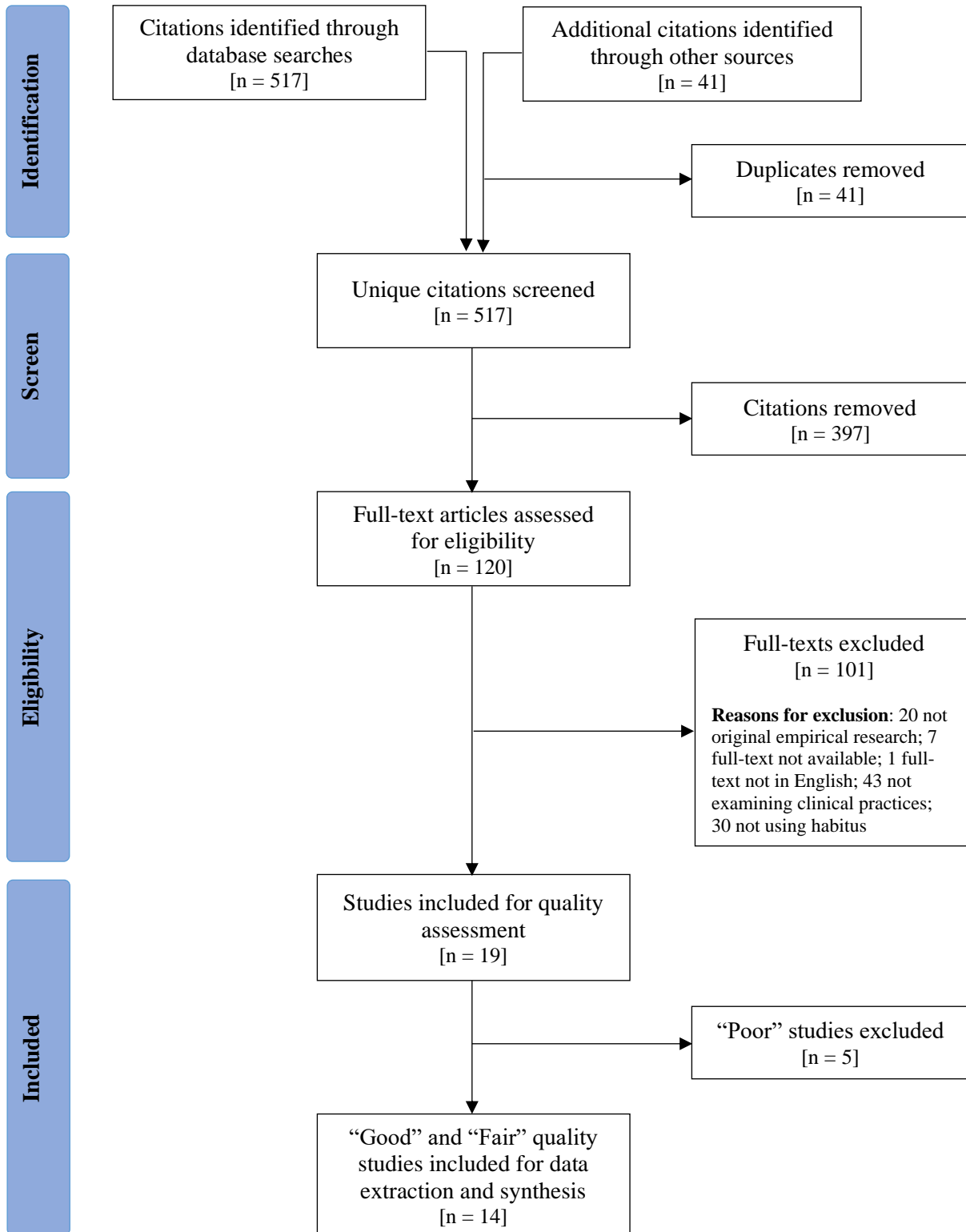
**Table 2.2** Quality assessment of included articles using CASP Qualitative Checklist

Author (year)	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Total Score	Maximum Score	% Score	Quality
Angus (2003)	Y	Y	Y	N	Y	NA	N	N	Y	N	5	9	56%	Fair
Broom (2014)	Y	Y	NR	Y	Y	NA	Y	Y	Y	N	7	9	78%	Fair
Brown (2008)	Y	Y	NR	Y	NR	NA	N	N	Y	N	4	9	44%	Poor
Callaghan (2006)	Y	Y	NR	N	NR	NA	N	NR	N	N	2	9	22%	Poor
Cardona (2009)	N	Y	NR	NR	NR	NA	N	NR	N	N	1	9	11%	Poor
Carter (2014)	N	Y	Y	N	Y	NA	Y	NR	Y	Y	6	9	67%	Fair
Ernst (2016)	Y	Y	Y	NR	Y	N	N	NR	Y	N	5	10	50%	Fair
Kirschner (2001)	Y	Y	NR	NR	Y	N	N	N	Y	N	4	10	40%	Poor
Kontos (2009)	Y	Y	Y	Y	Y	NA	Y	Y	Y	Y	9	9	100%	Good
Lake (2015)	Y	Y	Y	NR	Y	Y	N	NR	N	N	5	10	50%	Fair
Lalleman (2016)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10	10	100%	Good
Lauzon Clabo (2008)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10	10	100%	Good
Lee (1999)	Y	Y	Y	NR	Y	Y	N	NR	Y	Y	7	10	70%	Fair
Montenegro (2009)	Y	Y	Y	NR	NR	NA	Y	NR	Y	N	5	9	56%	Fair
Morberg (2012)	Y	Y	Y	Y	Y	NA	Y	Y	Y	N	8	9	89%	Fair
Nettleton (2008)	Y	Y	NR	Y	Y	NA	N	NR	N	N	4	9	44%	Poor
Rischel (2008)	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	9	10	90%	Good
Sandvoll (2017)	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	9	10	90%	Good
Soares (2017)	Y	Y	Y	NR	Y	N	Y	NR	Y	N	6	10	60%	Fair

Y = “yes”, N = “no”, NR = “not reported”, NA = “not applicable”.

Q1: was there a clear statement of the aims of the research? Q2: Is a qualitative methodology appropriate? Q3: Was the research design appropriate to address the aims of the research? Q4: Was the recruitment strategy appropriate to the aims of the research? Q5: Was the data collected in a way that addressed the research issue? Q6: Has the relationship between the researcher and participants been adequately considered? Q7: Have ethical issues been taken into consideration? Q8: Was the data analysis sufficiently rigorous? Q9: Is there a clear statement of findings? Q10: IS the value of the research clearly demonstrated?

**Figure 2.1** PRISMA flow diagram of study selection process



### *Data Extraction and Synthesis*

I extracted the following data using a data extraction form that was developed specifically for the current review (**Appendix A**): first author's last name, publication year, primary outcome(s), main study aim(s), study population, study location, study setting, study design and methods, type(s) of data collected, analysis plan, major findings, definition of *habitus*, use of *habitus*, limitations, and contributions. Results were synthesized through constant comparisons of the extracted data to identify similar themes across the included studies.

## **RESULTS**

The database searches identified 476 unique citations and a review of their bibliographies yielded an additional 41 citations (**Figure 2.1**). Nineteen studies met all of the inclusion criteria and were appraised for their quality. Of the nineteen studies, fourteen were rated as “good” or “fair,” and included for data extraction and synthesis. The fourteen included studies used qualitative methods, with most employing an ethnographic approach that combined participant observation, semi-structured interviews, and focus group discussions (**Table 2.3**). All but one of the studies were published after the year 2000 [33]. Six of the studies were conducted in Europe [34-39], and eleven of the studies focused on nurses as their study population [34-44]. The clinical practices studied varied widely as did the study settings. Three of the studies fell within the expanded definition of “clinical practice,” where the outcomes were practices that indirectly affect patient care. These outcomes were power exchanges between physicians and patients



during clinical interactions [33], nurses' motivation to nurse [34], and nursing managers' oversight in the implementation of patient safety practices [36].

### *Defining Habitus*

Before examining how researchers have used *habitus* in studying medical providers' clinical practices, I first assessed how researchers had defined *habitus* in their studies. According to Bourdieu, *habitus* is a “systems of durable, transposable dispositions, structured structures predisposed to functioning as structuring structures, that is, as principles of the generation and structuring of practices and representation... [45]” Bourdieu went on to state that *habitus* tends to produce practices that will reproduce the objective conditions that first gave rise to it, so that practices become quasi-automatic, or second nature, over time and with repetition.

Each of the included studies defined *habitus* differently, but line-by-line coding using Bourdieu's definition as a comparison guide revealed several commonalities. In terms of what *habitus* is, ten of the fourteen studies defined it as dispositions [33-36,38,39,41-43,46]. In terms of what *habitus* does, nine of the studies referenced the generation or regulation of actions [36-39,41,42,44,46, 47]. Of these nine studies, three further extended their definition to show that *habitus* plays a role in steering how individuals' perceive their worlds [41,44,47]. In terms of the qualities of *habitus*, seven studies echoed Bourdieu in describing it as durable [33,35-38,40,42]. Three of these seven also described *habitus* as transposable or adaptable [35,38,42]. Four studies specified the quasi-automatic nature of the actions and perceptions that stem from *habitus* [35,39,42,47]. Lastly, two studies highlighted the tendency for *habitus* to reproduce existing social structures [33,47].

Line-by-line coding also revealed commonalities among the included studies' definitions of *habitus* that, while not explicitly in Bourdieu's written definition of *habitus*, are a part of his conceptualization of the theory. Specifically, five of the studies indicated *habitus* as being enclosed within particular social spaces or groups [39-41,43,47]. Five studies stated that *habitus* is acquired [33,35,37,43,46], with three of the five identifying socializations as the route of acquisition [33,37,46]. The final similarity was among five studies that stated that *habitus* is an internalization or embodiment of external factors [33,35,36,38,47].

### *Applying Habitus*

Even though all of the included studies explicitly declared the use of *habitus* in their texts, the application of the theory – or how the theory was used – is not always well defined (**Table 2.3**).

Of the fourteen studies, only seven described how *habitus* was used. Of these, six used *habitus* as an analytic tool to guide data analysis and interpretation [34,35,39,40,44,46]; the remaining one used *habitus* as the independent variable [36].

Part of Bourdieu's larger *Theory of Practice*, *habitus* is intimately linked with the concepts of *field* and *capital* [45]. A *field* is the social space within which agents interact with one another in order to gain *capital*, or valuable resources that give agents authority and power (e.g., money, education, status). And *habitus* can be conceived as an individual's "feel for the game" that puts them at a certain position within the *field*. Twelve of the studies included some explanation of *field* and *capital* along with their definitions of *habitus*, but most did not further explore these

**Table 2.3** Overview of studies included in the systematic review

Author (year)	Clinical practice	Country	Population	Design	Use of habitus & main findings
Angus (2003)	Labor and delivery support	Canada	Nurses (n=57) Nursing manager (n=4)	Compressed ethnography	<b>Use of habitus:</b> To inform data analysis on how “contextual” ground” can influence the adoption (or not) of an evidence-based labor support intervention. <b>Main findings:</b> Factors that influenced uptake (or not) of the evidence-based labor support intervention were nursing leadership, interprofessional struggle with physicians, physical environment of the hospital, the consumer group, & greater social, political and economic contexts.
Broom (2014)	Antibiotic prescribing	Australia	Physicians (n=30)	Semi-structured interviews	<b>Use of habitus:</b> To conceptualize the structure-agency dialectic to make sense of the disjuncture between physicians’ understanding of antibiotic resistance & their sub-optimal prescribing practices. <b>Main findings:</b> Physicians’ antibiotic prescribing practices are significantly influenced by the “risk” of not demonstrating appropriate behaviors & losing professional reputation (i.e., their habitus is guided by “doing what is right” and “seeming competent”). Physicians also make conscious investment to maintain the “taken-for-granted” nature (i.e., the habitus) of ongoing prescribing practices.
23 Carter (2014)	Motivation to nurse	United Kingdom	Nurses (n=12)	“Long” interviews	<b>Use of habitus:</b> To provide a framework for the classification and interpretation of interview data on nurses’ views on nursing as “vocation” or “altruism.” <b>Main findings:</b> Nurses do not think of their decision to enter into the profession as either vocation or altruism. In fact, nurses’ motivations to nurse were personal and influenced by their gender as well as their social and cultural contexts.
Ernst (2016)	Uptake of evidence-based practices	Denmark	Nurses (n=10) Hospital staff & management (n=17)	Ethnography	<b>Use of habitus:</b> To serve as an analytical tool to understand how nurses of an Integrated Emergency Department are affected by evidence-based standardization of nursing practices. <b>Main findings:</b> There are 3 types of nursing practices: curing, caring, & “in between.” Nurses with the curing ethos are favored due to the dominance of scientific evidence within the healthcare field. Nurses with the curing ethos are characterized by a habitus that easily adopts to changes in their work field.
Kontos (2009)	Dementia patient care	Canada	Personal support worker, nurses, occupational therapists, physical therapists, & recreational therapists (n=43)	Focus groups, research-based drama	<b>Use of habitus:</b> To provide a framework, along with Merleau-Ponty’s conceptualization of <i>perception</i> , to expand the current understanding of the role of embodied selfhood in caring for dementia patients. <b>Main findings:</b> Shared bodily experiences and embodiment of past social & cultural experiences expressed as part of habitus facilitates sympathetic care by creating opportunities for practitioners & patients to recognize each other’s personhood.

**Table 2.3** (continued)

Author (year)	Clinical practice	Country	Population	Design	Use of habitus & main findings
Lake (2015)	Acute hospital patient care	New Zealand	Nurse (n=1)	Ethnography	<p><b>Use of habitus:</b> To serve as a framework to illuminate how nurses accomplish multiple moments of nursing “within and between patients’ needs for care.”</p> <p><b>Main findings:</b> There is an unthinking aspect to nursing that is achieved through nurses having acquired dispositions (habitus) that guide them to work within or around the rules and structures (doxa) of the hospital ward (field) in order to achieve the unconscious goals of the patient and the institution.</p>
Lalleman (2016)	Implementation of patient safety practices	Netherlands, USA	Nurse middle managers (n=16)	Ethnography	<p><b>Use of habitus:</b> To act as the foundation for examining how nurse middle managers’ (NMMs) habitus, especially the caring disposition, activates strategies that can help/hurt the implementing of patient safety practices.</p> <p><b>Main findings:</b> NMMs exhibit 3 distinct configurations of habitus. “Dominant caring” aids patient safety in the short term but undermines long term operation. “Caring &amp; collegial” hurts patient safety by shifting NMMs focus to caring for staff. “Dominant scientific” is best for long term sustainable patient safety as well as employee cooperation and satisfaction.</p>
24 Lauzon Clabo (2008)	Post-operative pain assessment	USA	Nurses (n=23)	Ethnography	<p><b>Use of habitus:</b> To work as the theoretical grounding in the study of <i>how</i> nurses assess postoperative pain and <i>how</i> the social contexts of nurses’ workplace influence their pain assessment practices.</p> <p><b>Main findings:</b> Nurses in the same unit have similar pain assessment practices but similarities do not cross to other units. Practices against the norm of a unit are not common, unacceptable, and “will be fixed.” Nurses who cannot adapt are often removed.</p>
Lee (1999)	Power relationship in healthcare service exchanges	USA	Physicians (n=5) Female patients (n=11)	Ethnography	<p><b>Use of habitus:</b> To inform the study of the roles of forms of capital in influencing patient &amp; physician behaviors and power relations in health care service encounters.</p> <p><b>Main findings:</b> Physicians habitus comes largely from their medical education/training, which is characterized by a high value on individual accountability and a preference for high-tech, specialized medicine. This habitus is incongruent with patients’ habitus and results in physicians having limited social capital and limited power in service encounters.</p>
Montenegro (2009)	Tuberculosis patient care	Brazil	Nurses (n=3)	Historical-social study	<p><b>Use of habitus:</b> To guide data analysis and interpretation on understanding the strategies used by nurses to care for patients during the implementation of the Action Against Tuberculosis Program in the 1960s. <b>Main findings:</b> The new program signified a move in favor of scientific knowledge. This gave certified nurses power over uncertified nurses and shifted treatment strategies from about caring for patients to about curing the disease.</p>

**Table 2.3** (continued)

Author (year)	Clinical practice	Country	Population	Design	Use of habitus & main findings
Morberg (2012)	School nursing	Sweden	School nurses (n=39)	Focus groups, semi-structured interviews	<b>Use of habitus:</b> To serve as the framework for understanding school nurses' profession in relation to other professionals in the educational field. <b>Main findings:</b> School nurses play an important role in the overall wellbeing of students. While school nurses view themselves more as supports and advocates for the students as individuals, they are views by other school staff and parents simply as a medical expert.
Rischel (2008)	Hospital admission assessments	Denmark	Nurses (n=4)	Structured observation	<b>Use of habitus:</b> To frame the study and to inform study methodology to explore nurses' experience and their competence doing admission assessments. <b>Main findings:</b> Nurses each had unique patterns of practice when admitting patients that did not correspond to a level of expected competence based on their length of experience. The practices of nurses is more of an unconscious embodied reaction to individual patients rather than to a set of procedures.
Sandvoll (2017)	Care home patient care	Norway	Nursing aides (n=37) Supervising nurses (n=8)	Ethnography	<b>Use of habitus:</b> To set the foundation, along with Douglas' concept of "dirt as a matter out of place," for describing the complex tacit nursing that takes place in care homes. <b>Main findings:</b> The tacit nature of nursing in care homes comes from their habitus, which favors routines. When unordinary events occur, nurses are required to break from their habitus in order to actively cope with and resolve the situation at hand. Such breaks from habitus and being "out of place" can contribute to negative emotions from nurses towards patients.
Soares (2017)	Nutritional care	Brazil	Physicians (n=18) Patients (n=5)	Case study	<b>Use of habitus:</b> To inform data analysis and interpretation in investigating possible interference of the distinct cultural origins of foreign physicians in their approaches to nutritional care. <b>Main findings:</b> While Cuban physicians personal habitus towards the food consumption and eat practices of their Brazilian patients emphasizes social context and the role of social determinants, their medical habitus towards nutritional care emphasizes is strictly biomedical and emphasizes individual responsibility.

concepts within the contexts of their research. In the remaining two studies, Lee, Ozanne & Hill examined how different forms of capital possessed by patients, nurses, and physicians lead to different relations in healthcare encounters [33]. And Morberg, Lagerström & Dellve looked at the sources of school nurses' different forms of capital and how they influence whether these providers are seen as medical experts or educators by students, teachers, and parents [37].

In addition to combining *habitus* with *field* and *capital*, a few of the included studies also combined *habitus* with other Bourdieusian theoretical concepts and concepts from other social scientists. In their study, Lake, Rudge & West added Bourdieu's concept of *doxa* (i.e., an unquestioned truth or common belief that can give rise to common action) to highlight how nurses' practices are guided by unwritten expectations as much as they are by written rules and procedures [43]. Similarly, Kontos & Naglie used Merleau-Ponty's reconceptualization of perception to show that among dementia care providers, bodily movements, postures and gestures reflect one's *habitus* as much as actions, tastes and values do [41]. To demonstrate the effects of *habitus* disrupted, Soares & Furtado used the concept of *hysteresis* (i.e., an effect of dissonance between *habitus* and a new social context) to draw attention to the adaptations and conscious reflections that have to take place when Cuban physicians move to a new environment in Brazil [46]. In another example, Sandvoll used Mary Douglas' theory of "dirt as a matter out of place" to illustrate how care home nurses' *habitus* is challenged when residents deviate from their daily routine, and how that challenge can result in difficult emotions among the nurses [39].

## DISCUSSION

In this review, I examined how Pierre Bourdieu's theory of *habitus* has been applied in existing research to study the clinical practices of medical providers. The small number of studies that were included suggests that published research on this particular topic is uncommon. Available data show that the use of *habitus* for examining medical providers' clinical practices has been largely restricted and unclear. However, the theory can be a useful tool for expanding current ways of understanding medical providers' perceptions and practices, including when interacting with and treating PLWH-SU.

### *Existing Studies Define Habitus Differently*

All of the included studies had their own interpretations of *habitus* even though most of them referenced Bourdieu's later definition from *The Logic of Practice* [48]. Some researchers' explanations of *habitus* were influenced by their fields of study. Since their study population was nurses, Carter and Sandvoll based their interpretations of *habitus* on a piece of previous research that was published in a nursing journal rather than on Bourdieu's direct definition [34,39]. The manner in which researchers defined *habitus* was also associated with their study aims. For example, in Soares & Furtado, the mention of *habitus*' ability to allow "adaptation to the logic of a new social field" is likely related to the study's objective of assessing changes in practices among Cuban physicians who relocated to Brazil [46].

Interestingly, many of the included studies' definitions of *habitus* included elements that reflect their main findings. In Ernst, the framing of *habitus* as a "propensity for doing one thing rather than other" is reflected specifically in the identification of two distinct types of *habitus* that nurse participants had developed: caring or curing [35]. In Lalleman et al., *habitus* is described as generating "a limited number of behavioral strategies [36]." This supported their finding that nurse middle managers have three configurations of their disposition to care: dominant caring, caring and collegial, and dominant scientific. And in Lauzon Clabo, the specification that *habitus* induces agents to act in ways that are "acceptable" or "seen as successful" is recalled in the finding that nurses have similar approaches to conducting pain assessment because deviations from the norm brought on corrective actions and loss of acceptance by their peers [42]. Based solely on analyzing the published texts, it is unclear whether researchers' organized their results based on their interpretations of *habitus*, or if they crafted their explanations of the theory after arriving at their findings in order to facilitate the reader's engagement with the authors' work.

### *The Use of Habitus Has Been Limited*

Current studies that used *habitus* to examine medical providers' clinical practices have been mostly limited in their settings, their study populations, and their methodologies. Twelve of the included studies were conducted in countries with universal healthcare systems [34-41,43,44,46, 47]. The under-representation of other types of healthcare systems, like the one in the U.S., likely means that the existing literature is lacking studies on the impact of structural factors that are not part of the universal healthcare model that can influence medical providers' interactions with patients. For example, if Ernst's study was replicated in the U.S. where nurses' and physicians'



times are reimbursed differently, would nurses still participate in standardization of practices to those that matched their physician colleagues?

Eleven of the studies focused on nurses. And while there has been an increase in the number of male nurses, the profession remains female dominated. In Europe, where most of the included studies were conducted, the female-to-male nurse ratio is approximately five-to-one [49]. In the U.S., this ratio is nine-to-one [50]. This disproportion reinforces the inherent gendered division of labor within the nursing profession, and likely influenced the observations that researchers made and the data that were collected in the reviewed studies. This potentially contributed to the downplaying of gender as a factor that influences medical providers' *habitus* and clinical practices. In addition to gender-imbalance, the focus on nurses has contributed to a neglect of the effects of power. Nurses occupy a specific position within the hierarchy of medical providers, and their *habitus* and practices may be influenced by this position. This is clearly demonstrated in Lauzon Clabo where the author found that one group of nurses' normative practices for postoperative pain assessment is driven by their desires to not disturb the physicians [42]. A diversification of *habitus* research to physicians and other types of medical providers can expand our understanding of how training, ethos, and power contribute to clinical practices.

All of the included studies employed qualitative methods. This comes as no surprise given that Bourdieu himself has stated that close-ended survey questions commonly used in quantitative research are not the best tool for understanding the complex relationships between *habitus* and practices [51]. A main strength of using qualitative approaches is that the data reflect directly from how medical providers interpret their own practices based on their own perceptions, beliefs,

and worldview without the filter of investigator-designed questions. Another benefit to using qualitative approaches is that findings are situated within the environments of the medical providers' work. Even though qualitative approaches to studying *habitus* provide more contextualized information, any associations discovered cannot be statistically tested for significance or strength, and findings are often not generalizable to other contexts. Additionally, qualitative research findings may not be as readily viewed as evidence-based, and therefore their acceptance and adoption by the medical community may be limited.

### *The Use of Habitus Has Been Unclear*

The reviewed studies all used *habitus*, as that is one of the inclusion criteria. However, data synthesis shows that how the theory was used in these studies was not always clear. Six of the included studies stated they used *habitus* as a frame [33,37,38,41-43], but none were definitive in whether this framing was around how research questions were asked, how data were collected, how findings were interpreted, or something else entirely. Besides not clearly knowing how *habitus* was applied, my findings from this review also demonstrate that there is inconsistency between how researchers intended to use *habitus* and how they actually used the theory. For example, Carter stated in her article she intended to use *habitus* to provide a framework for the classification and interpretation of data on nurses' motivations to nurse [34]. However, how the classification and interpretation were done was never discussed in the published text, and references to *habitus* were about the works of other researchers rather than the study at hand.

It is important to note that my assessment of the authors' use of *habitus* is based solely on the published texts. This means the incongruity between what I have termed the authors' intended and actual uses of *habitus* may be an issue of presentation rather than application. In other words, the authors may have used *habitus* in exactly the way they intended when designing their studies but did not present it as such in the written texts under either the methods or the findings.

Nevertheless, this lack of clarity restricts our understanding of the utility of *habitus* in research with medical providers and reinforces the theory's reputation as a nebulous "black box [52]."

Another way in which existing studies have been unclear is in how they have operationalized *habitus*. Operationalization in the current context refers to how studies have (or have not) characterized *habitus*. In other words, what is *habitus* within the setting of each study? What contributes to the development of the *habitus*, and through what processes does *habitus* impact medical providers' practices? While current studies have been able to demonstrate associations between *habitus* and factors such as providers' education [37] and settings [40], the how remains uncertain. In the case of Angus, Hodnett & O'Brien-Pallas, the authors concluded that many factors within a hospital can influence nurses' uptake of labor support practices, such as physical space, leadership buy-in, views of the patients, and relationship within the nursing staff [40]. However, it is not made clear in the article how each of these factors influence nurses' practices. And as just mentioned, being able to clearly operationalize *habitus*, being able to understand the how, is critical to understanding the utility of the theory in research with medical providers.

*Incorporating Other Theoretical Concepts Can be Helpful*

Several of the included studies incorporated other theoretical concepts along with *habitus*. These additions did not resolve the drawbacks that I have discussed surrounding the ambiguities of how the theory is characterized and applied in research, but in most cases, they did help improve understanding of the findings and highlight the usability of the theory. This is most clear in Lake, Rudge & West and in Soares & Furtado, who used *doxa* and *hysteresis*, respectively, in their studies to bring attention to the durability and transposability of *habitus* [43,46]. In doing so, these studies gave indications that drastic changes in environment (e.g., moving to a new country) may be needed in order to disrupt *habitus* and change medical providers' practices.

In other cases, such as in Kontos & Naglie and in Lee, Ozanne & Hill, the incorporation of additional theoretical concepts took away from *habitus*. For Kontos & Naglie, the inclusion of Merleau-Ponty's conceptualization of *perception* to understand tacit knowledge and embodied selfhood among dementia care providers brought up the important point that implicit expressions of bodily gestures can impact patient care as much as explicit actions [41]. However, the article's focus on tacit knowledge overshadowed its discussion on *habitus*. In the instance of Lee, Ozanne & Hill, while the authors aimed to examine power relations between physicians and their female patients during clinical encounters, the article focused on discussing how physicians, nurses, and patients came to possess different quantities of economic, cultural, and social capital. The concept of *power* and how it relates to *habitus* were not discussed [33].

*Current Studies Using Habitus Are Informative*

Despite the shortcomings just discussed, current studies of medical providers' clinical practices using *habitus* do show that this theory can offer researchers a different way of understanding how medical providers come to form their perceptions and practices when interacting with patients. The most outstanding examples are Lake, Rudge & West and Rischel, Larsen & Jackson, who demonstrated that *habitus* is able to move beyond long-established ways of studying nursing practices. In Lake, Rudge & West, the authors showed that nurses make decisions about how to care for their patients based not just on written rules and procedures, but also in an unthinking way that has culminated from practice experience to achieve the unconscious goals set by the patient, the physicians, and the hospital [43]. In Rischel, Larsen & Jackson, the authors challenged Benner's five stages of clinical competence model (novice, advanced beginner, competent, proficient, the expert) to show that senior and junior nurses have a similar *habitus* for performing admission assessments that is characterized by their ability to adapt to individual patients, and that competence does not depend linearly on experience [38].

In addition to demonstrating that *habitus* can allow researchers to study medical providers' practices in ways that have not yet been done, existing studies point out factors that are important to be measured when studying *habitus*. For instance, Angus, Hodness & O'Brien-Pallas showed the importance of looking at broader factors beyond the nursing unit (e.g., the financial status of the hospital) in their examination of nurses' uptake of labor and delivery innovations [40]. And Ernst highlighted how oversight organizations can provide legitimacy for certain ways of thinking and behaving in their study about the standardization of nurses' practices to resemble physicians' practices [35]. And even though it may be hard to capture, Kontos & Naglie showed

that body gestures and postures are important reflections of physicians' *habitus*, and they can influence clinical interactions as much as physicians' actions [41].

### *Implications for Studying Medical Providers' Treatment of PLWH-SU*

An objective for my review of published studies is to assess whether Bourdieu's *habitus* can be a useful theoretical tool for expanding on current studies on medical providers' perceptions of and their practices towards caring for PLWH-SU. My findings have shown that this is the case in several ways. First, *habitus* allows investigators to consider simultaneously the roles of the providers' own agency as well as the structures that they work within. Second, *habitus* allows researchers to examine fields beyond the immediate provider-patient dyad to assess the contributions of more distal factors. Lastly, when combined with other concepts such as *doxa* and *hysteresis*, *habitus* allows researchers to explore the circumstances under which medical providers' dispositions towards PLWH-SU can become transposable.

Taking into account these advantages just mentioned, a study of medical providers' *habitus* towards the treatment of PLWH-SU should separate objective factors into structural factors and agentic factors to show that medical providers are neither fully autonomous nor fully bound by their circumstances. The study should incorporate the non-professional field to show medical providers as complex entities whose perceptions and practices in the workplace can be shaped by their personal histories (e.g., cultural experiences) and their socio-demographics (e.g., gender). To demonstrate the durability and transposability of *habitus*, the study should extend past

dispositions and practices to incorporate medical providers' overall approaches to caring for PLWH-SU (e.g., paternalistic, shared decision making).

A study of medical providers' *habitus* towards the treatment of PLWH-SU should also address the shortcomings I have identified through this review in order to maximize the theory's usefulness. To combat the limited acceptance of qualitative research findings in the medical field, the study should incorporate both quantitative and qualitative methodologies. The use of mixed methods will allow for quantification of the theory (e.g., estimating a typology of medical providers' *habitus*, testing the strength of associations between medical providers' *habitus* and their clinical practices) while still maintaining rich context. To address the limitations on how *habitus* has been applied in existing research, the study should pay special attention to be as clear as possible in terms of how *habitus* is thought of in the context of the research, and how the theory is used to inform the research methods. Not only will this improve the comprehensibility of this study, but it can also improve researchers' understanding of the study's findings and their understanding of the value of social theories as a tool in health-related research.

#### *Limitations of this Review*

This review had some limitations. First, I included only studies that were published in English, thereby excluding the many studies that appeared in my search results that are published in Spanish and Portuguese. However, the databases I used provided translated abstracts, which I reviewed. And my research process showed that only one citation was excluded because the full text is not published in English. Second, this review only included studies that assessed clinical

practices that either directly or indirectly impacted patient care. This criterion excluded studies that assessed medical providers' other professional responsibilities, such as teaching, and practice management. But given that one of the main objectives for this review was to assess the usability of *habitus* as a foundation to expand the current knowledge base on medical providers' perceptions and practices during clinical encounters, the choice to focus on studies related to practices that affect patient care is appropriate.

## **CONCLUSION**

This review is the first of its kind and it shows that social theories, particularly Pierre Bourdieu's theory of *habitus*, can serve as an innovative approach to studying medical providers' practices for the purpose of identifying new knowledge that can help to close existing treatment gaps and improve the health outcomes of people living with HIV and substance use.



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## CHAPTER 3

Multi-level Factors Associated with Medical Providers' Treatment of Patients Living with HIV  
and Substance Use: Applying Bourdieu's Theory of *Habitus*

### ABSTRACT

**Objective:** Healthcare providers play a central role in helping patients living with HIV to achieve optimal health as part of the larger effort to curb the HIV epidemic in the U.S. This study aimed to adapt the work of sociologist Pierre Bourdieu to introduce the concept of *treatment habitus* and to examine whether medical providers have different kinds of *treatment habitus* towards patients living with HIV and substance use (PLWH-SU). **Methods:** Using secondary cross-sectional survey data, I performed latent profile analyses to identify a typology of *treatment habitus* among 258 HIV medical providers from Miami, Atlanta, and the District of Columbia. I performed latent class regressions to identify key characteristics associated with providers' *treatment habitus*. Lastly, I conducted distal outcome analyses to assess whether *treatment habitus* was associated with differences in providers' treatment-related practices. **Results:** There are four groups of medical providers, each with a unique *treatment habitus* that can be characterized by differing likelihoods of deferring antiretroviral therapy (ART) prescription to PLWH-SU and varying attitudes about PLWH-SU. *Treatment habitus* is associated with providers' race, study site, and recent receipt of substance use disorder training. *Treatment habitus* is not associated with either discussing substance use with patients frequently or providing substance use treatment information to patients. **Conclusion:** By demonstrating that

HIV medical providers have varying dispositions towards caring for PLWH-SU that can be affected by multi-level factors, this study showed that social theory can be useful in the conceptualization and design of public health research inquiries.

## **INTRODUCTION**

Optimal engagement and retention in medical care are important factors for curbing the HIV epidemic in the United States (U.S.) [1,2]. Yet, linkage to care and retention in care are the two steps along the HIV Care Continuum that continues to have the largest drop-offs [3-5]. This is especially the case for people living with HIV (PLWH) who are living with substance use [6-8].

As much as one-half of the 1.2 million PLWH in the U.S. are people living with substance use [9-11]. Between 2014 and 2018, while overall number of HIV diagnoses decreased by 7%, the number of new HIV infections attributable to injection drug use, which is only a fraction of all substance use-related HIV diagnoses, increased by 4% [12]. People living with HIV and substance use (PLWH-SU) lag behind other PLWH along the HIV Care Continuum [13-18], and these disparities have led to greater viral transmission [19,20], more frequent preventable hospitalizations [21-23], and greater morbidity and mortality in this population [24,25].

Poor and stigmatizing experiences with healthcare providers are commonly cited factors associated with PLWH-SU's lack of engagement in care [26-29]. One particular clinical experience of concern is medical providers' reluctance to prescribe antiretroviral therapy (ART) to PLWH-SU. Although current guidelines recommend initiating ART for all PLWH

immediately (or as soon as possible) after HIV diagnoses [30], studies from as recently as 2018 show that medical providers continue to delay ART initiation for PLWH-SU based on concerns of lack of medication adherence as the result of patients' substance use [31-33].

Despite the dyadic nature of the patient-provider relationship, much of the existing literature has focused on the perspectives of PLWH rather than those of their clinicians [26]. Furthermore, research studies that have attempted to improve PLWH-SU's health outcomes through intervening with provider-based strategies have not been meaningfully successful. Specifically, existing interventions are usually tested in controlled settings, have small samples, or have positive effect sizes that are often marginal and/or short lived [34-37].

New approaches are needed in order to better understand medical providers' care management of PLWH-SUs, and to potentially inform the development of innovative interventions that may effectively reduce the healthcare disparities experienced by this long-marginalized population. The current chapter combines the fields of public health and sociology to introduce the concept of *treatment habitus* and uses latent profile analysis techniques to investigate medical providers' *treatment habitus* towards caring for PLWH-SU.

## **THEORETICAL FOUNDATION**

### *Bourdieu's Theory of Habitus*

The conception and design of the current analysis draw from sociologist Pierre Bourdieu's theory of *habitus*. Originating from Aristotelian philosophy, Bourdieu defines *habitus* as



“systems of durable, transposable dispositions, structured structures predisposed to function as structuring structures...as principles of the generation and structuring of practices and representation...[38]” He goes on to describe *habitus* as “objectively ‘regulated’ or ‘regular’ without in any way being the product of obedience to rules...without presupposing a conscious aiming at ends...[and] without being the product of the orchestrating action of a conductor [38].” In simpler terms, *habitus* is a matrix of dispositions (i.e., a set of inherent tendencies or inclinations) within the boundaries of individuals’ social realms that guide practices.

While the use of *habitus* as the foundation of studies of practices have been mostly limited to the social sciences, its use in health-related research has become more popular in recent years. Researchers have used *habitus* to understand adolescents’ alcohol use in the United Kingdom (U.K.) [39,40], young people’s use of the internet for health management in Australia [41,42], eating practices of mothers in Brazil [43], and injection practices among substance users in San Francisco and New York [44,45]. Beyond individual health practices, researchers have also utilized *habitus* to examine medical, nursing and pharmacy education in the U.S. and U.K. [46-50], medical decision making in Australia and the U.S. [51,52], and healthcare provider leadership and management in the Netherlands and the U.S. [53,54].

There are several reasons why *habitus* is an appropriate theoretical foundation on which I have designed my current analysis. First, by simultaneously recognizing the roles of agency (i.e., the capacity for individuals to act freely) and structure (i.e., the social forces that limit agents), the use of *habitus* diverts away from the “either/or” paradigm of dichotomizing practices [55] and

moves away from viewing medical providers' practices regarding patient treatment as either entirely by choice or fully determined by existing social structures.

Second, the use of *habitus* expands current understandings of the factors that can influence one's dispositions through the incorporation of *fields*. Part of Bourdieu's broader Theory of Practice, a *field* is the social space within which individuals interact with one another in either cooperation or competition [38]. Beyond the patient-provider pair, medical providers' dispositions, and thereby their practices, towards caring for PLWH-SU can be influenced by their participation in three other *fields*: (1) their workplace, (2) the healthcare profession, and (3) the larger society within which they carry out their everyday lives. As part of medical practices with explicit policies and implicit organizational cultures, medical providers' perceptions and practices towards the care of PLWH-SU can be affected by workplace conditions such as the number of patients they have to see per day, or the availability of resources to refer patients to substance use treatment programs. In assuming their professions, medical providers' perceptions and practices can be influenced by longstanding ideals that have been attached to their roles as healers, caregivers, and even heroes. Lastly, as a member of a larger society, medical providers' perceptions and practices towards caring for PLWH-SU can be influenced by political factors such as the availability of syringe services programs or expanded Medicaid. This larger social structure can also influence providers' perceptions and practices in the way it shapes their professional and personal experiences related to their social positions and affiliations (e.g., their age, race/ethnicity, class, religious beliefs, etc.).

The third reason I have chosen to use *habitus* as the theoretical foundation for this analysis is that it allows for the incorporation of time and particularly time in the past. According to Bourdieu, one's *habitus* is first laid during early childhood, and it persists throughout one's life, only changing and adapting (transposing) through development and new experiences as they enter new *fields* [38]. In other words, medical providers' current dispositions towards caring for PLWH-SU is developed from historical experiences beginning as early as when they were children, through pre-medical education, medical education and training, and up to the present.

While previous research has demonstrated the usefulness of *habitus* as a heuristic frame, it is not without its limitations. Most notably, the many factors from across multiple *fields* and timepoints that can be incorporated into the development of one's *habitus* can make the concept feel like a "black box [56]." To address this shortcoming, I bring in the Health Lifestyle Theory.

#### *Cockerham's Health Lifestyle Theory*

Developed by sociologist William Cockerham in 2005, the Health Lifestyle Theory (HLT) reimagines well-established individualistic approaches to understanding individual practices regarding health by using the agency-structure construct and Bourdieu's *habitus*. According to HLT, one's practices relating to their health are not random unconnected acts but are rather parts of a distinct pattern based on the life choices (agency) that are made available within the range of life chances (structure) [57,58]. And through the interactions of one's life choices and life chances, an individual's dispositions toward action - or their *habitus* - is formed [57,58].

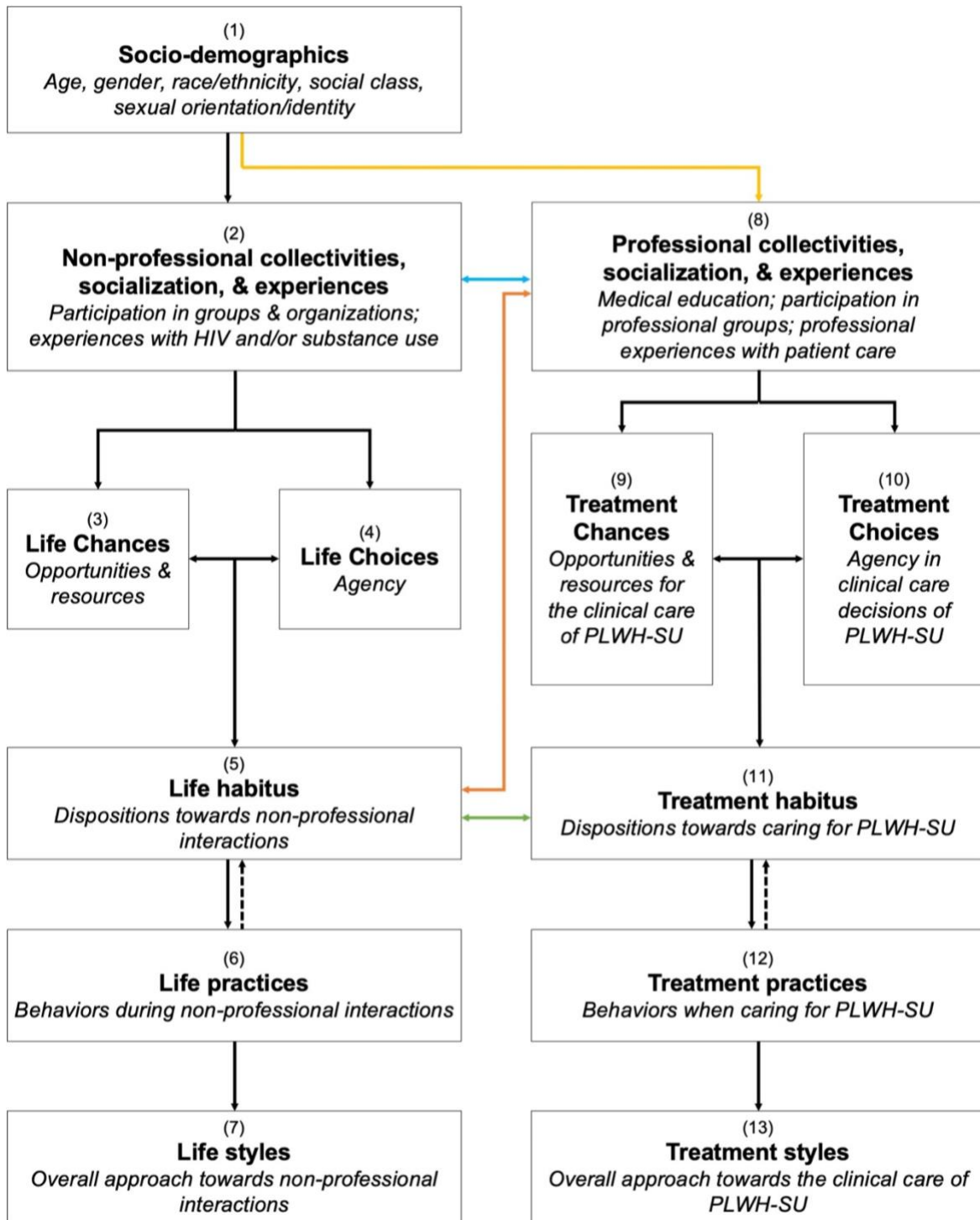
While researchers have been able to utilize *habitus* to study individual practices in its intended, relational format, HLT is a more practical approach to operationalizing the theoretical concept in a few ways. First, it condenses the multitude of factors that are incorporated into one's *habitus* into four main categories: (1) socio-demographics such as age, gender and race/ethnicity, (2) socializations and experiences, (3) life chances, and (4) life choices. Second, HLT more clearly demonstrates the element of time by presenting *habitus* in a linear, or causal format. Lastly, the theory exhibits the durability of *habitus* by including the practices that are guided by one's *habitus*, as well the reproduction of practices into lifestyles.

Because of its clarity, practicality, and its ability to demonstrate all the important features of *habitus*, I adapted the HLT and created a conceptual framework specific for studying (1) the factors that contribute to the development of providers' *habitus* and (2) how these factors can influence providers' practices when caring for PLWH-SU.

## **CONCEPTUAL FRAMEWORK**

Combining my understanding of Bourdieu's *habitus* and Cockerham's HLT, I developed the following conceptual framework for understanding medical providers' dispositions – or their *treatment habitus* – towards caring for PLWH-SU (**Figure 3.1**). Broadly, this framework can be seen as representing two *fields* that medical providers occupy: the non-professional on the left (boxes 1-7) and the professional on the right (boxes 8-13). The framework can be loosely seen as representing time in that, constructs appearing nearer the top of the model often precede constructs that appear below them.

**Figure 3.1** Conceptual framework of medical providers' *treatment habitus*



To understand medical providers' *treatment habitus*, what it is and how it is developed, I begin on the left side of my conceptual framework, with the non-professional *field*. Starting in their early lives, long before they considered careers in healthcare, medical providers' socio-demographics (box 1) influenced their non-professional socializations, experiences, and participations in collectivities (box 2). The combination of these elements then dictated the providers' life chances, or the types and quantities of opportunities and resources available within the providers' social worlds (box 3), and their life choices, or the possible options for providers to enact their agency given their access to opportunities and resources (box 4). The interplay between life chances and life choices (i.e., structure and agency) then gave rise to medical providers' overall dispositions to act, or their life habitus (box 5). This life habitus then goes on to guide medical providers' life practices (box 6), which over time with reproduction crystallizes into their lifestyles for interacting with others in the non-professional world.

While medical providers are often exposed to their future profession before beginning their formal medical training (e.g., volunteering at a hospital while in high school), for clarity, I consider medical providers to enter the professional *field*, or the right side of my conceptual framework, when they enter medical education. Once medical providers enter into this professional *field*, they are re-socialized as they earn experiences related to their professional roles (box 8). These socializations and experiences influence medical providers' treatment chances (i.e., the types and quantities of resources and opportunities that are available for caring for PLWH-SU patients within their workplace and broader professional world; box 9), and their treatment choices (i.e., decisions medical providers can make regarding the clinical care of their PLWH-SU patients given the resources and opportunities that are available; box 10). The

interplay between chances and choices establishes medical providers' *treatment habitus*, or their dispositions to act when it comes to caring for PLWH-SU (box 11). *Treatment habitus* guides providers' *treatment practices* (box 12), which with repetition over time, solidifies into providers' *treatment styles*, or their overall approaches to caring for PLWH-SU (box 13).

An important feature of my conceptual framework is the arrows connecting the left and right sides. These arrows represent crossovers between the professional and non-professional *fields* and show that medical providers' professional lives can be influenced by their non-professional ones. Starting with medical education, the schools providers apply to and attend (e.g., allopathic vs. osteopathic, public vs. private), and the institutions providers choose to work in (e.g., private practice vs. safety-net hospital) are affected by their socio-demographics, their non-professional experiences, and their life habitus (from boxes 1, 2, and 5 to box 8). And while treatment chances and treatment choices may have more direct influence over the development of medical providers' *treatment habitus*, their life habitus has an effect as well (from box 5 to box 11). These paths exemplify the idea that medical providers exist within both professional and non-professional realms simultaneously, and that their clinical practices cannot be fully understood apart from their lives outside of work.

## **METHODS**

The three analytical goals of this chapter are to: (1) establish a typology of medical providers' *treatment habitus* through latent profile analyses, (2) identify predictors associated with different kinds of *treatment habitus* using latent class regressions, and (3) to assess whether medical

providers' *treatment habitus* is associated with their practices through distal outcome analysis. More detailed descriptions of each method are in the sub-sections below.

### *Study Population and Survey Design*

The current secondary analysis used data collected between April 2018 and September 2020 from surveys administered to medical providers licensed to prescribe medication who had treated at least one PLWH within the previous year in Miami, Florida (Miami), Atlanta, Georgia (Atlanta), and the District of Columbia (DC). The survey assessed providers' (1) demographics, clinical education and experience, and medical practice characteristics; (2) perceptions and practices towards the care of PLWH and PLWH-SU; and (3) knowledge and attitudes towards the provision of pre-exposure prophylaxis (PrEP) and of long-acting injectable HIV treatment.

Potential participants were identified and recruited through listings from: physician societies, medical provider training centers, scientific meetings, and health departments. All providers were invited to complete the 40-minute survey either online, using a hard copy, or over the phone with a qualified researcher. In all three cities, providers received periodic e-mail, mail, telephone, and in-person reminders to encourage participation. Providers who completed the survey received a \$50 incentive. Hard-to-reach non-respondents who completed the survey were given an additional \$50. Although survey methods such as recruitment and follow-up strategies varied slightly, identical survey items were administered in all three cities. Human subject research approval for the survey was obtained from Columbia University, the University of Miami, Emory University, George Washington University, and the D.C. Department of Health.



### *Latent Profile Analysis*

Using survey questions designed to capture attitudes, beliefs and perceptions, I estimated a typology of medical providers' *treatment habitus* towards caring for PLWH-SU using latent profile analysis (LPA), a probabilistic statistical method that identifies subgroups of individuals within a study sample based on responses to a set of continuous input variables [59].

#### Latent Profile Analysis Input Variables

Seven indicators were used as input variables for the LPA (**Table 3.1**). The first five input variables assessed providers' likelihood of deferring ART prescription to PLWH-SU based on various patient-level factors. Each indicator was rated on a scale of 1 (not likely) to 5 (most likely) with higher values reflecting higher likelihood for deferral. The first input variable was a scale that measured providers' likelihood of deferring ART prescription based on PLWH-SU's socio-demographics, such as their age, gender, race/ethnicity, current pregnancy, being uninsured, having Medicaid only, and being unemployed (Cronbach's alpha = 0.95). The second input variable was a scale that measured providers' likelihood of deferring ART prescription based on PLWH-SU's substance use and mental health, such as current and past injection drug use, current and past non-injection drug use, alcoholism, depression, and mental illness (Cronbach's alpha = 0.96). The third input variable was a scale that measured providers' likelihood for deferring ART prescription because of PLWH-SU's unmet social needs, such as not having a social support system, being homeless, being in an unstable living situation, caring for dependent children, caring for dependent adult(s), and food insecurity (Cronbach's alpha =

0.94). The fourth input variable was a scale that measured providers' likelihood for deferring ART prescription based on PLWH-SU's documented or perceived limited ability to fill prescriptions, to keep medical appointments, to be contacted, to understand instructions, and to adhere to treatment (Cronbach's alpha = 0.94). The fifth input variable was a single survey item that assessed providers' likelihood for deferring ART prescription because of PLWH-SU's documented or perceived limited readiness for HIV treatment.

The sixth input variable measured medical providers' belief about PLWH-SU's ART adherence, and it was a single survey item that asked providers to estimate the proportion of their PLWH-SU who they considered to be at least 90% adherent to their ART regimen (0-40%, 41-75%, and 76-100%). The last input variable measured medical providers' overall perceptions of PLWH-SU. This scaled indicator comprised survey items that asked how much providers agreed, from 1 (strongly disagree) to 5 (strongly agree), with the following statements: (1) there is a professional obligation to treat injection drug users with HIV/AIDS; (2) many of my HIV-infected patients cannot adhere to treatment regimens; (3) I would not initiate antiretroviral therapy for a patient if they reported active injection drug use; (4) even former drug users have difficulty adhering to antiretroviral therapy; (5) HIV-infected injection drug users have themselves to blame for their illness; (6) healthcare providers have little influence over their patients' injection drug use practices; (7) I feel uncomfortable talking to my patients about their injection drug use practices; and (8) I have a responsibility to talk to my HIV infected patients about safer injection practices. Higher values indicated more negative perceptions (Cronbach's alpha = 0.64).

### Latent Profile Analysis Procedures

**Table 3.1** Latent profile analysis (LPA) input variables and their corresponding survey questions

	<b>Input Variable Name</b>	<b>Variable Type</b>	<b>Survey Question(s)</b>
1	Likelihood to defer ART prescription because of PLWH-SU's socio-demographics	Continuous, composite scale	<i>Please rate how the following factors would deter you from prescribing ART to an HIV-positive patient who has a substance use disorder: (1) patient's age, (2) patient's gender, (3) patient's race/ethnicity, (4) current pregnancy, (5) being uninsured, (6) having Medicaid only, (7) being unemployed.</i>
2	Likelihood to defer ART prescription because of PLWH-SU's substance use & mental health	Continuous, composite scale	<i>Please rate how the following factors would deter you from prescribing ART to an HIV-positive patient who has a substance use disorder: (1) current injection drug use, (2) past injection drug use, (3) current non-injection drug use, (4) past non-injection drug use, (5) alcoholism, (6) depression, (7) mental illness.</i>
3	Likelihood to defer ART prescription because of PLWH-SU's unmet social needs	Continuous, composite scale	<i>Please rate how the following factors would deter you from prescribing ART to an HIV-positive patient who has a substance use disorder: (1) not having a social support system, (2) being homeless, (3) unstable living situation, (4) caring for dependent children, (5) caring for dependent adults, (6) food insecurity.</i>
4	Likelihood to defer ART prescription because of PLWH-SU's limited ability	Continuous, composite scale	<i>Please rate how the following factors would deter you from prescribing ART to an HIV-positive patient who has a substance use disorder: (1) limited ability to fill prescriptions, (2) limited ability to keep medical appointments, (3) limited ability to be contacted, (4) limited ability to understand/read instructions, (5) limited ability to adhere to treatment.</i>
5	Likelihood to defer ART prescription because of PLWH-SU's readiness	Continuous, single variable	<i>Please rate how the following factors would deter you from prescribing ART to an HIV-positive patient who has a substance use disorder: limited readiness.</i>
6	Belief about PLWH-SU's medication adherence	Categorical, single variable	<i>What percentage of your current HIV-positive patients who have a substance use disorder and are taking antiretroviral therapies would you consider at least 90% adherent to their prescribed regimens?</i>
7	Overall perceptions of PLWH-SU	Continuous, composite scale	<i>Please indicate how much you agree or disagree with the following statements: (1) There is a professional obligation to treat injection drug users with HIV/AIDS; (2) Many of my HIV-infected patients cannot adhere to treatment regimens; (3) I would not initiate antiretroviral therapy for a patient if they reported active injection drug use; (4) Even former drug users have difficult adhering to antiretroviral therapy; (5) HIV-infected injection drug users have themselves to blame for their illness; (6) Health care providers have little influence over their patients' injection drug use practices; (7) I feel uncomfortable talking to my patients about their injection drug practices; (8) I have a responsibility to talk to my HIV infected patients about safer injection practices</i>

All LPA procedures were performed using Mplus version 8.4 [60]. Model estimation began with a 1-profile model, with subsequent estimations increasing by one profile at a time until models no longer converged or when the latent profiles included too few respondents (<10% of study sample) and limited data interpretability. To avoid models reaching local maxima, all model estimations were conducted using 500 random starts and 100 replicated likelihoods. Once model enumeration was complete, I identified the best-fitting solution by comparing several fit statistics, including entropy, Akaike information criteria (AIC), Bayesian information criterion (BIC), and sample-size adjusted Bayesian information criterion (SABIC) [61].

### *Latent Class Regression*

Once the typology of medical providers' *treatment habitus* was established using LPA, I performed a latent class regression (LCR) to examine whether *treatment habitus* (i.e., the latent profiles) was associated with specific provider-related characteristics that are a part of the conceptual framework I had developed.

### Latent Class Regression Predictor Variables

Fifteen variables representing four constructs from my conceptual framework were selected as predictors for the LCR (**Table 3.2**). Provider's socio-demographics included their age (continuous), gender (female vs. male), and race/ethnicity (non-White vs. White). Providers' professional collectivities, socializations and experiences included their profession (non-physician vs. physician), location of their medical education (foreign vs. U.S.), and number of years of treating PLWH (more than 20 years vs. 20 or fewer years). Providers' treatment

**Table 3.2** Medical provider characteristics for the latent class regression (LCR) and their corresponding survey questions

<b>Framework Construct</b>	<b>Variable</b>	<b>Survey Question(s)</b>
Socio-demographics	Age	<i>What is your current age?</i>
	Gender	<i>What is your gender?</i>
	Race/ethnicity	<i>Are you Hispanic/Latino? What is your race?</i>
Collectivities, Socializations and Experiences	Profession	<i>Which of the following best describes our profession?</i>
	Medical education	<i>Where did you complete your formal medical education?</i>
	Years treating PLWH	<i>For how many years have you been caring for patients with HIV/AIDS?</i>
Treatment Chances	Study city	<i>In which of the participating study sites do you practice medicine?</i>
	Practice type	<i>Please select the choice that best describes your site.</i>
	Practice size	<i>How many patients are seen in your practice during a typical 1-month period?</i>
	Substance use treatment	<i>Does your primary practice site offer any of the following services: substance use treatment?</i>
	Mental health services	<i>Does your primary practice site offer any of the following services: mental health services?</i>
Treatment Choices	Number of PLWH-SU	<i>How many HIV-positive patients with substance use disorders do you care for during a typical 3-month period?</i>
	Substance use disorder training	<i>In the past 5 years, have you received formal training on the following topics related to substance use disorder?</i>
	Knowledge of syringe exchange services	<i>Are syringe/needle exchange services for people who inject drugs legal in your city?</i>
	Visits before ART start	<i>Once a patient is eligible for ART, how many visits will he/she generally make to your facility before beginning antiretroviral drugs (start taking pills)?</i>

chances, or the types and quantities of resources providers have, included study site (Miami, Atlanta, DC), their practice type (university affiliated hospital/clinic, community hospital/clinic, other), their practice size (<200 patients per month vs. 200+ patients per month), whether their practice offered substance use treatment (yes vs. no), and whether their practice offered mental health services (yes vs. no). Providers' treatment choices, or the decision providers can make that can influence their care of PLWH-SU, included the number of PLWH-SU they care for during a typical 3-month period (less than 10 patients vs. 10 or more patients), whether they received any formal substance use disorder training in the past 5 years (yes vs. no), their knowledge of whether syringe exchange services are legal in their city (not sure vs. sure), and the number of visits before they start eligible PLWH on ART (at least 1 visit vs. no visits).

#### Latent Class Regression Analysis Procedures

LCR was performed using the R3STEP procedure in Mplus [60]. This specific 3-step approach maintains the previously determined latent profile model structure and is preferred over other methods such as the pseudo class method [62].

#### *Distal Outcome Analysis*

To assess whether medical providers' *treatment habitus* is associated with differences in providers' *treatment practices*, I performed a distal outcome analysis using two behavioral outcome measures: whether providers discussed substance use with PLWH frequently (yes vs. no), and whether providers gave information on substance use treatment options to patients who

have substance use disorders (yes vs. no). The analysis was performed using the DCATEGORICAL procedure in Mplus.

## RESULTS

Two hundred fifty-eight medical providers completed the survey across the three study sites (**Table 3.3**), giving an overall response rate of 57% (Miami = 47%, Atlanta = 57%, DC = 64%). Approximately half of the survey respondents were female (56%), identified as non-Hispanic White (49%), and were, on average, 46 years-old ( $SD=12.2$ ). The majority of medical providers who completed the survey were physicians (73%) and received their medical education within the U.S. (85%). Among physician respondents, over half (56%) practiced as infectious disease specialists. Slightly more than one-third (37%) of providers worked at university-affiliated hospitals/clinics, and more than half (54%) worked at practices that see more than 200 patients each month. One-third (33%) of providers had more than 20 years of clinical experience, but slightly less (29%) have had more than 20 years of experience treating PLWH. While most providers (79%) cared for at least 20 PLWH within a typical 3-month period, less than one-fifth (17%) cared for at least 20 PLWH-SU within a typical 3-month period.

Comparing among the three study sites, there was a significant difference in terms of medical providers' race/ethnicity, with Miami (44%) having more Hispanic respondents than both Atlanta (10%) and DC (8%). More providers in Miami had over 20 years of clinical experience (55% vs. 29% Atlanta vs. 26% DC) as well as over 20 years of clinical experience treating PLWH (47% vs. 27% Atlanta vs. 22% DC). In terms of practice type, more providers in Miami

**Table 3.3.** Respondent demographics and practice characteristics

	<b>Miami</b> (n = 53)	<b>Atlanta</b> (n = 105)	<b>D.C.</b> (n = 100)	<b>Total</b> (n = 258)	
	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>p-value</i>
<b>Age</b> (mean, SD)	51 (12.5)	46 (11.9)	44 (11.6)	46 (12.2)	
<b>Gender</b>					
Male	27 (52.9)	47 (45.6)	39 (39.0)	113 (44.5)	0.253
Female	24 (47.1)	56 (54.4)	61 (61.0)	141 (55.5)	
<b>Race / Ethnicity</b>					
White, non-Hispanic	14 (26.9)	58 (55.2)	54 (54.6)	126 (49.2)	<0.001
Black, non-Hispanic	8 (15.4)	15 (14.3)	17 (17.2)	40 (15.6)	
Hispanic	23 (44.2)	10 (9.5)	8 (8.1)	40 (16.0)	
Other	7 (13.5)	22 (21.0)	20 (20.2)	49 (19.1)	
<b>Provider Type</b>					
Physician	43 (81.1)	74 (70.5)	71 (71.0)	188 (72.9)	0.332
NP, PA, Nurse Midwife	10 (18.9)	31 (29.5)	29 (29.0)	70 (27.1)	
<b>Field of Practice</b> †					
Primary care	17 (39.5)	19 (25.7)	29 (40.9)	65 (34.6)	<0.001
Infectious diseases	24 (55.8)	55 (74.3)	27 (38.0)	105 (56.4)	
Other	2 (4.7)	0 (0.0)	15 (21.1)	17 (9.0)	
<b>Medical Education</b>					
United States ‡	40 (75.5)	92 (87.6)	86 (86.0)	218 (84.5)	0.131
Other	13 (24.5)	13 (12.4)	14 (14.0)	40 (15.5)	
<b>Years of Clinical Experience</b>					
Less than 5 years	4 (7.6)	11 (10.6)	17 (17.2)	32 (12.5)	0.014
5-10 years	12 (22.6)	33 (31.7)	26 (26.3)	71 (27.7)	
11-20 years	8 (15.1)	30 (28.9)	30 (30.3)	68 (26.6)	
More than 20 years	29 (54.7)	30 (28.9)	26 (26.3)	85 (33.2)	
<b>Years of Experience Treating Patients Living with HIV</b>					
Less than 5 years	8 (15.1)	30 (28.6)	34 (34.0)	72 (27.9)	0.011
5-10 years	9 (17.0)	29 (27.6)	18 (18.0)	56 (21.7)	
11-20 years	11 (20.8)	18 (17.1)	26 (26.0)	54 (21.3)	
More than 20 years	25 (47.2)	28 (26.7)	22 (22.0)	75 (29.1)	
<b>Practice Type</b>					
University hospital / clinic	16 (30.2)	40 (38.1)	40 (40.0)	96 (37.2)	0.001
Community health center	17 (32.1)	12 (11.4)	35 (35.0)	64 (24.8)	
Private medical practice	7 (13.2)	18 (17.1)	9 (9.0)	34 (13.2)	
Other	13 (24.5)	35 (33.3)	16 (16.0)	64 (24.8)	



**Table 3.3** (continued)

	<b>Miami</b> (n = 53)	<b>Atlanta</b> (n = 105)	<b>D.C.</b> (n = 100)	<b>Total</b> (n = 258)	
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>p-value</i>
<b>Number of Patients Seen in the Practice in a 1-Month Period</b>					
1 to 100	16 (30.2)	30 (28.9)	21 (21.0)	67 (26.1)	0.441
101-200	11 (20.8)	23 (22.1)	18 (18.0)	52 (20.2)	
More than 200	26 (49.1)	51 (49.0)	61 (61.0)	138 (53.7)	
<b>Number of Patients Living with HIV Cared for in a 3-Month Period</b>					
Less than 5	0 (0.0)	8 (7.6)	14 (14.0)	22 (8.6)	0.002
5 to 9	2 (3.9)	2 (1.9)	9 (9.0)	13 (5.1)	
10 to 19	4 (7.8)	5 (4.8)	11 (11.0)	20 (7.8)	
20 or more	45 (88.2)	90 (85.7)	66 (66.0)	201 (78.5)	
<b>Number of Patients Living with HIV and Substance Use Cared for in a 3-Month Period</b>					
Less than 5	21 (39.6)	41 (39.1)	45 (45.5)	107 (41.6)	0.157
5 to 9	7 (13.2)	29 (27.6)	16 (16.2)	52 (20.2)	
10 to 19	17 (32.1)	17 (16.2)	21 (21.2)	55 (21.4)	
20 or more	8 (15.1)	18 (17.1)	17 (17.2)	43 (16.7)	
<b>Willingness to Prescribe ART to Patients Living with HIV with Substance Use Disorder</b>					
Strongly agree	49 (94.2)	96 (92.3)	81 (81.8)	226 (88.6)	0.030
Other	3 (5.8)	8 (7.7)	18 (18.2)	29 (11.4)	

P-values were calculated using either the chi-squared test or the Fisher's exact test.  
<sup>†</sup> Applies only to survey respondents who are physicians (n=188).  
<sup>‡</sup> Includes American Samoa, Guam, Northern Mariana Islands, Puerto Rico, and U.S. Virgin Islands.

(32%) and DC (31%) worked in community health centers, while more providers in Atlanta (33%) practiced in non-university affiliated hospitals and clinics, Ryan White clinics, and research clinics. While there was no difference in number of patients seen in practices in a 1-month period across the study sites, there was a significant difference in number of PLWH providers cared for. Compared to providers in Miami (0%) or Atlanta (8%), more providers in DC (14%) cared for fewer than 20 PLWH during a typical 3-month period. When asked how much they agreed with this statement: *if medically indicated, I would prescribe antiretroviral*

*therapy (ART) to an HIV-positive patient who has a substance use disorder*, 89% of providers responded they strongly agreed. (94% Miami vs. 92% Atlanta vs. 82% DC).

### *The Typology of Medical Providers' Treatment Habitus*

Comparisons of fit statistics from the LPA show that the 4-profile model was the best-fitting solution (**Table 3.4**). Although the 5-profile model has a lower BIC and higher entropy than the 4-profile model, the probability of being correctly assigned to a profile (i.e., the probability of the respondent actually being profile *k* for those assigned to profile *k*) is lower in this model. Furthermore, two of the groups in the 5-profile model include fewer than 10% of respondents, thereby limiting data interpretability. Together, the 4-profile model established a typology where each profile was a group of medical providers who shared similar dispositions, or *treatment habitus*, towards caring for PLWH-SU (**Table 3.5**).

Profile 1 comprised 28% of the survey sample. These providers were very similar in their perceptions and attitudes to the overall sample. Medical providers in this group reported a low likelihood for deferring ART to PLWH-SU for all reasons except for patient readiness, where the mean for the group was 4.2 (versus the sample mean of 3.2). Nearly half (46%) of the providers in this group believed that more than three-quarters of their PLWH-SU were 90% adherent to their ART. Providers in this group had slightly more positive perceptions towards PLWH-SU than the overall survey sample (mean = 1.8 vs. 1.9).

Profile 2 was the largest of the four latent profiles, consisting of 38% of the sample. This group of medical providers had the lowest means to all five of the “likelihood to defer ART to PLWH-

**Table 3.4** Fit statistics for latent profile models

	1-Profile	2-Profiles	3-Profiles	4-Profiles	5-Profiles
<b>Information Criteria</b>					
AIC	4548.98	3544.20	3248.69	3079.80	2963.70
BIC	4598.72	3625.92	3362.38	3225.47	3141.35
SABIC	4554.33	3553.00	3260.93	3095.49	2982.84
Entropy	-	0.97	0.97	0.95	0.96
BLRT	-	-2260.49 (p < 0.001)	-1749.10 (p < 0.001)	-1592.34 (p < 0.001)	-1498.90 (p < 0.001)
<b>Group Counts and Proportions<sup>†</sup></b>					
Profile 1	258 (100.0%)	184 (71.3%)	31 (12.0%)	73 (28.3%)	73 (28.3%)
Profile 2	-	74 (28.7%)	171 (66.3%)	98 (38.0%)	18 (7.0%)
Profile 3	-	-	56 (21.7%)	30 (11.6%)	100 (38.8%)
Profile 4	-	-	-	57 (22.1%)	52 (20.2%)
Profile 5	-	-	-	-	15 (5.8%)

AIC = Akaike information criterion

BIC = Bayesian information criterion

SABIC = sample-size adjusted Bayesian information criterion

BLRT = bootstrapped likelihood ratio test

<sup>†</sup> Group counts and proportions are based on most likely latent profile membership.

SU” input variables. This group of providers was the only one that responded that they would not likely defer ART to PLWH-SU as a result of patients’ limited readiness for treatment (mean = 1.6 vs. 3.2). In terms of ART adherence, more medical providers in this group than in the overall sample and all the other latent profile groups thought that 41-75% of their PLWH-SU were at least 90% adherent to their treatment (probability = 0.5 vs. 0.4). Medical providers in this group also had the most positive perception of PLWH-SU among all the latent profile groups.

Profile 3 was the smallest, with just 12% of the survey sample. Compared to the overall average, this group of medical providers responded that they would be more likely to defer ART if they thought PLWH-SU had limited ability to refill prescriptions, attend medical appointments, be contacted, follow instructions, and/or adhere to treatment (mean = 3.7 vs. 2.4). More providers in

**Table 3.5** Estimated means and probabilities of providers' responses based on the 4-profile LPA model

	Overall	Profile 1	Profile 2	Profile 3	Profile 4
<b>Group Sizes and Proportions</b>	-	73 (28.3%)	98 (38.0%)	30 (11.6%)	57 (22.1%)
<b>Likelihood of Deferring ART Based on PLWH-SU's</b>					
Socio-demographics	1.51	1.08	1.04	1.45	<b>2.90</b>
Substance Use and Mental Health	1.68	1.21	1.04	2.44	<b>2.97</b>
Unmet Social Needs	1.74	1.24	1.09	2.55	<b>3.07</b>
Limited Ability	2.43	2.55	1.35	<b>3.70</b>	3.48
Limited Readiness	3.15	4.19	<b>1.59</b>	4.31	3.95
<b>Beliefs about PLWH-SU's ART Adherence</b>					
0-40% are at least 90% adherent	0.16	0.17	<b>0.09</b>	<b>0.26</b>	<b>0.22</b>
41-75% are at least 90% adherent	0.41	0.37	<b>0.51</b>	0.44	<b>0.25</b>
76-100% are at least 90% adherent	0.43	0.46	0.40	<b>0.30</b>	0.53
<b>Overall Perceptions of PLWH-SU</b>	1.89	1.81	1.79	2.08	2.08

**Bold** indicates the estimated means for each latent profile that are at least 1 standard deviation below or above the overall mean for continuous input variables. It also indicates the estimated probabilities for each latent profile that are at least 25% below or above the overall prevalence for the categorical input variables.

this profile believed that only as much as 40% of their PLWH-SU were adherent to their ART (probability = 0.3 vs. 0.2). In terms of their overall perceptions of PLWH-SU, providers with this *treatment habitus* had a slightly more negative view than the overall sample and the providers in the first two groups.

The last group, Profile 4, made up 22% of the survey sample. Medical providers in this group were more likely to defer ART to PLWH-SU because of the patients' socio-demographics (mean = 2.9 vs. 1.5), substance use and mental health (mean = 3.0 v. 1.7), and unmet social needs (mean = 3.1 vs. 1.7). Providers in this group were also slightly more likely to defer ART because of PLWH-SU's limited ability and readiness, but these differences were within one standard

deviation of the overall sample mean. Although nearly one-quarter (22%) of the providers in this group believed that 40% or less of their PLWH-SU are at least 90% adherent to their ART, more than half (53%) thought more than 75% of their PLWH-SU were medication adherent; this proportion was greater than the overall sample as well as every other latent profile. Similar to providers in Profile 3, providers with this *treatment habitus* also had a slightly more negative perception about PLWH-SU than the overall sample.

#### *Provider Characteristics Associated with Treatment Habitus*

Latent class regression using the 3-step procedure found several provider characteristics that are associated with the typology of *treatment habitus* estimated through the LPA (**Table 3.6**). Since Profile 1 was the most like the overall study sample, it was used as the reference group.

Providers in Profile 2 were not statistically significantly different from providers in Profile 1 for any of the predictor variables. Providers in Profile 3 were similar to providers in Profile 1 except they were less likely to have received any formal substance use disorder training in the past five years ( $OR_{P3/P1} = 0.4$ , 95% CI = 0.2-1.0). Providers that were in Profile 4 were the most different from the reference group. These providers were less likely to have identified as non-White ( $OR_{P4/P1} = 0.3$ , 95% CI = 0.1-0.7), they were more likely to be practicing in Miami ( $OR_{P4/P1} = 4.1$ , 95% CI = 1.4-11.8), and they were less likely to have received formal substance use disorder training in the past 5 years ( $OR_{P4/P1} = 0.5$ , 95% CI = 0.2-1.0).

#### *Providers' Treatment Habitus and Their Practices*

**Table 3.6** Key predictors of medical providers' LPA membership

	<b>Profile 2 vs. Profile 1</b>	<b>Profile 3 vs. Profile 1</b>	<b>Profile 4 vs. Profile 1</b>
	<i>OR (95% CI)</i>	<i>OR (95% CI)</i>	<i>OR (95% CI)</i>
<b>Socio-demographics</b>			
Age	1.02 (0.98 – 1.06)	0.99 (0.94 – 1.04)	1.02 (0.91 – 1.07)
Gender ( <i>female vs. male</i> )	0.93 (0.46 – 1.89)	0.46 (0.16 – 1.31)	0.78 (0.32 – 1.89)
Race ( <i>non-White vs. White</i> )	0.81 (0.41 – 1.60)	0.67 (0.27 – 1.63)	<b>0.31 (0.14 – 0.71)</b>
<b>Collectivities, Socializations, &amp; Experiences</b>			
Profession ( <i>non-physician vs. physician</i> )	1.51 (0.66 – 3.45)	1.29 (0.41 – 4.02)	0.58 (0.22 – 1.52)
Education ( <i>foreign vs. US</i> )	2.09 (0.45 – 5.17)	2.12 (0.50 – 8.94)	0.87 (0.24 – 3.15)
Experience Treating PLWH Patients ( <i>≤20 years vs. &gt;20 years</i> )	0.56 (0.20 – 1.57)	1.15 (0.29 – 4.60)	0.43 (0.16 – 1.48)
<b>Treatment Chances</b>			
Study Site			
( <i>Miami vs. Atlanta/Washington, D.C.</i> )	1.39 (0.53 – 3.63)	1.02 (0.17 – 6.21)	<b>4.06 (1.39 – 11.83)</b>
( <i>Atlanta vs. Miami/Washington, D.C.</i> )	0.65 (0.31 0 1.37)	2.07 (0.80 – 5.34)	1.83 (0.76 – 4.40)
( <i>Washington, D.C. vs. Miami/Atlanta</i> )	*	*	*
Practice Type			
( <i>University-affiliated hospital/clinic vs. other</i> )	0.68 (0.28 – 1.63)	0.71 (0.25 – 2.05)	0.65 (0.28 – 1.53)
( <i>Community health center vs. other</i> )	1.79 (0.62 – 5.16)	0.78 (0.21 – 2.94)	0.77 (0.24 – 2.46)
Patients Seen in Practice in a 1-Month Period ( <i>&lt;200 vs. ≥200</i> )	0.57 (0.29 – 1.12)	0.51 (0.22 – 1.22)	0.39 (0.19 – 0.83)
Practice Provides Substance Use Treatment ( <i>yes vs. no</i> )	1.37 (0.60 – 3.12)	1.82 (0.59 – 5.59)	2.32 (0.83 – 6.53)
Practice Provides Mental Health Services ( <i>yes vs. no</i> )	1.57 (0.64 – 3.82)	0.72 (0.22 – 2.29)	0.46 (0.17 – 1.24)
<b>Treatment Choices</b>			
PLWH-SU Patients in a 3-Month Period ( <i>&lt; 10 vs. 10+</i> )	1.62 (0.84 – 3.14)	1.28 (0.49 – 3.33)	0.92 (0.42 – 2.00)
Substance Use Disorder Training in Past 5 Years ( <i>yes vs. no</i> )	0.71 (0.36 – 1.44)	<b>0.39 (0.15 – 0.99)</b>	<b>0.45 (0.21 – 0.99)</b>
Syringe Exchange Programs are Legal ( <i>not sure vs. yes/no</i> )	0.67 (0.34 – 1.33)	2.01 (0.79 – 5.18)	1.38 (0.63 – 3.01)
Number of Visits Before Starting ART ( <i>at least 1 vs. none</i> )	0.70 (0.37 – 1.32)	0.48 (0.18 – 1.28)	0.92 (0.41 – 2.03)

Bold indicates statistically significant associations between latent profile membership and the key predictor.

\* Odds ratio (OR) could not be computed by Mplus.

**Table 3.7** Distal outcome analysis of providers’ latent profile membership and *treatment practices*

	Discusses SU with PLWH Frequently		Provides SU Treatment Information	
	<i>Proportion</i>	<i>Chi-squared (<math>\chi^2</math>)</i>	<i>Proportion</i>	<i>Chi-squared (<math>\chi^2</math>)</i>
<b>Profile 1</b>	0.56	-	0.69	-
<b>Profile 2</b>	0.71	2.37 (p = 0.123)	0.76	0.80 (p = 0.371)
<b>Profile 3</b>	0.49	0.70 (p = 0.404)	0.76	0.42 (p = 0.519)
<b>Profile 4</b>	0.66	0.53 (p = 0.469)	0.73	0.17 (p = 0.679)

Reference = Profile 1  
 Distal outcome variables are binary and presented as proportion of providers who responded “yes.”

To test for the link between providers’ *treatment habitus* and their *treatment practices* (i.e., the observable actions providers take regarding the clinical care of PLWH-SU), two distal outcome analyses were performed (**Table 3.7**). In terms of whether providers discussed substance use with their PLWH-SU frequently, there was no significant difference by latent profile; although Profile 2 had the highest proportion, at 71.3%. In terms of whether providers gave information on substance use treatment options to their patients who have substance use disorders, there was also no significant difference by latent profile; although Profile 3 had the highest proportion at 76.2% of providers responding “yes.”

## DISCUSSION

Latent profile analysis estimated four distinct groups of medical providers among the 258 who completed the survey, each with a different *treatment habitus* towards caring for PLWH-SU. The groups differed in terms of reasons for deferring ART to PLWH-SU and beliefs about PLWH-

SU's adherence to ART. *Treatment habitus* was associated with several characteristics but was not associated with either of the two clinical practices assessed.

Latent class regression found that providers in Profile 3 and Profile 4 were less likely to have received any formal training about substance use disorders in the previous five years. Research has shown that substance use stigma is ubiquitous across healthcare settings [63,64], and that it is associated with delayed care and poorer health outcomes [65,66]. While there is evidence that substance use disorder training can reduce stigma among medical providers [67-70], studies have shown that the receipt of training is low [71,72]. And even when medical providers have knowledge, they may not be able to implement it as a result of other constraints such as lack of time or inconsistent local laws and policies [73,74]. The lack of training explains, at least partially, the higher likelihood of ART deferral reported in these two latent profile groups.

Medical providers' race was associated with their *treatment habitus*. Specifically, providers who were in Profile 4 were more likely to have identified as non-Hispanic White when compared to providers in Profile 1. According to the LPA results, providers in Profile 4 were more likely than any other groups to defer ART to PLWH-SU because of the patients' socio-demographics. Racial concordance between PLWH and their medical providers has been shown to improve health outcomes, as well as increase patient satisfaction and reduce patient mistrust [75-78]. In each of the study cities, the healthcare workforce does not reflect the PLWH populations they serve racially. While 46% of PLWH in Miami identify as Hispanic, only 17% of physicians identify as the same [79,80]. In Atlanta, 68% of PLWH identify as non-Hispanic Black, but only 14% of physicians identify as the same [81,82]. And in DC, the comparison is 72% Black PLWH



to only 19% Black physicians [83,84]. This racial misalignment between providers and their PLWH is a reflection of long-standing racism in medicine [85, 86] that has led to a lack of diversity in the healthcare workforce [87,88] and sustained health disparities experienced by racial minority patients, which many PLWH-SUs are [89,90].

Study site was identified as being associated with medical providers' *treatment habitus*.

Particularly, providers in Profile 4 were more likely to be from Miami than the other two locations. This finding is likely a representation of the state of the HIV epidemic in Miami. In a comparison of six U.S. urban centers, Miami has the greatest number of HIV criminalization laws; the city deprives many PLWH by not adopting to expand Medicaid under the Affordable Care Act; and it has the lowest rate of primary care practices per square mile [91]. The difference by city can also be a representation of the large variances in HIV-related funding. For example, in 2016, the state of Florida received less federal HIV grant funding per PLWH than both Georgia and DC, despite having one of the heaviest HIV burdens in the nation. In fact, the state received less funding than the national average [92]. The lack of infrastructure and financial support can limit the resources available to medical providers to care for PLWH-SU that, as already discussed, can contribute to the development medical providers' *treatment habitus*.

The distal outcome analysis did not find any statistically significant outcomes. This lack of a finding does not necessarily mean that there is no link between providers' *treatment habitus* and their *treatment practices*. Given the similarly mediocre proportions across the four *treatment habitus* profiles, the lack of a statistically significant finding may suggest that medical providers are overall not comfortable discussing substance use with their PLWH and PLWH-SU [93]. The

lack of a statistically significant association may suggest that while *habitus* may guide medical providers' dispositions to caring for PLWH-SU, it does not predict specific practices. This is supported by Bourdieu's own definition of the theory when he wrote that *habitus* is "without presupposing a conscious aiming at ends." Finally, given that the theory of *habitus* has not been quantified in a similar way in previous research, further exploration may be needed to identify other approaches that can be more helpful for understanding the relationship between medical providers' *treatment habitus* and their *treatment practices* in caring for PLWH-SU.

### *Limitations*

There are several limitations to this chapter. First, the survey was administered to medical providers in three cities and the data was self-reported and thereby possibly subjected to social desirability and recall biases. While my results may not be generalizable, my findings and methods are still applicable and helpful to studies in other places or with other PLWH sub-populations. Furthermore, the geographical focus of this survey was important given that the Southern U.S. is the epicenter of the domestic HIV epidemic [94], with Miami and Atlanta leading in the number of new HIV diagnoses [12]. The second limitation to my analysis was the lower response rate from Miami providers despite enhanced follow-up efforts and the offer of additional incentives. Although the number of respondents was less-than-ideal, the response rate from Miami was comparable to the other two study sites. And descriptive analyses showed that the characteristics of Miami respondents were similar to those of Atlanta and DC respondents. The third, and perhaps largest, limitation to my analysis was the low reliability of the "overall perception towards PLWH-SU" scale inputted into the LPA. While the low scale reliability was

not desirable analytically, I decided to include the scale in my analysis because it was important methodologically and conceptually, as attitudes and perceptions are a critical aspect of *habitus*. The final limitation was that not every construct in my conceptual framework was well-captured by the survey, which is part of the challenge with working with secondary data. Fortunately, I was able to include additional survey questions prior to data collection, which helped provide me with much of the pertinent data that I needed for the analysis. Even with these limitations, this analysis represents an important step towards achieving a more nuanced understanding of the impact of medical providers on PLWH-SUs' HIV clinical outcomes.

## CONCLUSION

This analysis is the first of its kind, combining Bourdieu's concept of *habitus* and Cockerham's Health Lifestyle Theory to introduce the concept of medical providers' *treatment habitus*. The use of latent profile analysis techniques revealed distinct patterns of *treatment habitus* among a sample of medical providers in three locations with heavy HIV disease burden that are subtle and may be easily overlooked. Findings from this analysis represent a move towards a more refined understanding of medical providers' dispositions towards caring for PLWH-SU, as well as the varied factors that can facilitate or hinder the development of different dispositions.

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## CHAPTER 4

### Using Bourdieu to Examine How Medical Providers View Their Care of Patients Living with HIV and Substance Use

#### ABSTRACT

**Objectives:** People living with HIV and substance use (PLWH-SU) are being left behind in the continuum of HIV treatment. Improving provider perceptions of and practices towards PLWH-SU during clinical interactions can potentially enhance patient health outcomes. This study uses the concept of *treatment habitus* to describe how medical providers understand their approaches to caring for PLWH-SU and how those approaches may have come to be developed. **Methods:** Between November 2020 and March 2021, I conducted conversational interviews with 36 purposefully selected medical providers from Miami, Florida, Atlanta, Georgia, and the District of Columbia who had previously completed a cross-sectional survey on their perceptions and practices towards the care of people living with HIV (PLWH) and PLWH-SU. **Findings:** Medical providers viewed the availability of ancillary staff and time as important resources that impact how they provide care to PLWH and PLWH-SU. Medical providers' personal experiences play a role in influencing their decisions to pursue a career in HIV medicine and concordance between providers and PLWH can encourage more open communication. Despite many providers using negative terms when speaking about their PLWH-SU, most did not describe negative practices towards PLWH-SU in their accounts of past clinical interactions. Medical providers have a spectrum of *treatment habitus* distinguishable by their intentions

(person-centered vs. provider-centered) and the methods they use to provide care (informative vs. directive). Most medical providers have a person-centered and informative *treatment habitus* while a few have a provider-centered and directive *treatment habitus*. Some providers also revealed in interviews that they have a flexibility in their *treatment habitus* that allows them to switch between being informative and being directive depending on the specific circumstances of a PLWH or PLWH-SU. **Conclusion:** Conversational interviews revealed that medical providers have different dispositions towards caring for PLWH and PLWH-SU, and that different dispositions are linked with different approaches to clinical practice that can impact the quality of care provided to, and thereby the health outcomes of, PLWH and PLWH-SU.

## INTRODUCTION

Approximately one-third to one-half of the 1.2 million people living with HIV (PLWH) in the United States (U.S.) are also living with substance use [1-3]. While the overall number of HIV diagnoses decreased by 7% between 2014 and 2018, the number of HIV infections attributable to injection drug use increased by 4% [4]. People living with HIV and substance use (PLWH-SU) are not benefitting from many of the advances in HIV care and they lag behind other PLWH along the HIV Care Continuum [5-8]. These disparities have led to higher rates of viral transmission, more frequent hospitalizations, and greater mortality in this population [9-12].

Optimal retention in medical care is a corner stone to controlling the HIV epidemic in the U.S. However, poor and stigmatizing experiences in clinical settings and with healthcare providers have been associated with PLWH-SU's lack of engagement in care and have contributed to

PLWH-SU's sub-optimal health outcomes [13,14]. One specific concern is medical providers' reluctance to prescribe antiretroviral therapy (ART) to PLWH-SU. Despite current guidelines recommending ART be prescribed to all PLWH as soon as possible after HIV diagnosis [15], medical providers continue to delay ART initiation for PLWH-SU on the basis of medication nonadherence [16-18]. Although the patient-provider relationship includes a dyad of individuals, much of the existing literature aiming to improve PLWH-SU's involvement in HIV care has focused on the perspectives of the patients and not their clinicians [13]. And when clinicians have been studied, efforts to improve medical providers' treatment of PLWH-SU have not been effective (e.g., interventions were often tested in controlled settings, with small samples, and intervention benefits were marginal and/or short-lived) [19-21].

New ways of understanding how medical providers interact with PLWH-SU during clinical encounters are needed in order to inform the development of effective and sustainable interventions. One such approach is through the use of social theories, in this case Pierre Bourdieu's theory of *habitus* [22]. This theory was conceptualized specifically to understand individual dispositions and can be used to provide a more refined interpretation of not only what medical providers do when caring for PLWH-SU, but also how they may have come to behave in the ways they do. The current chapter revisits the concept of medical providers' *treatment habitus* when caring for PLWH-SU, explores through conversational interviews how medical providers perceive and describe their interactions with PLWH-SU, and what they believe are the factors that tend to influence these interactions.

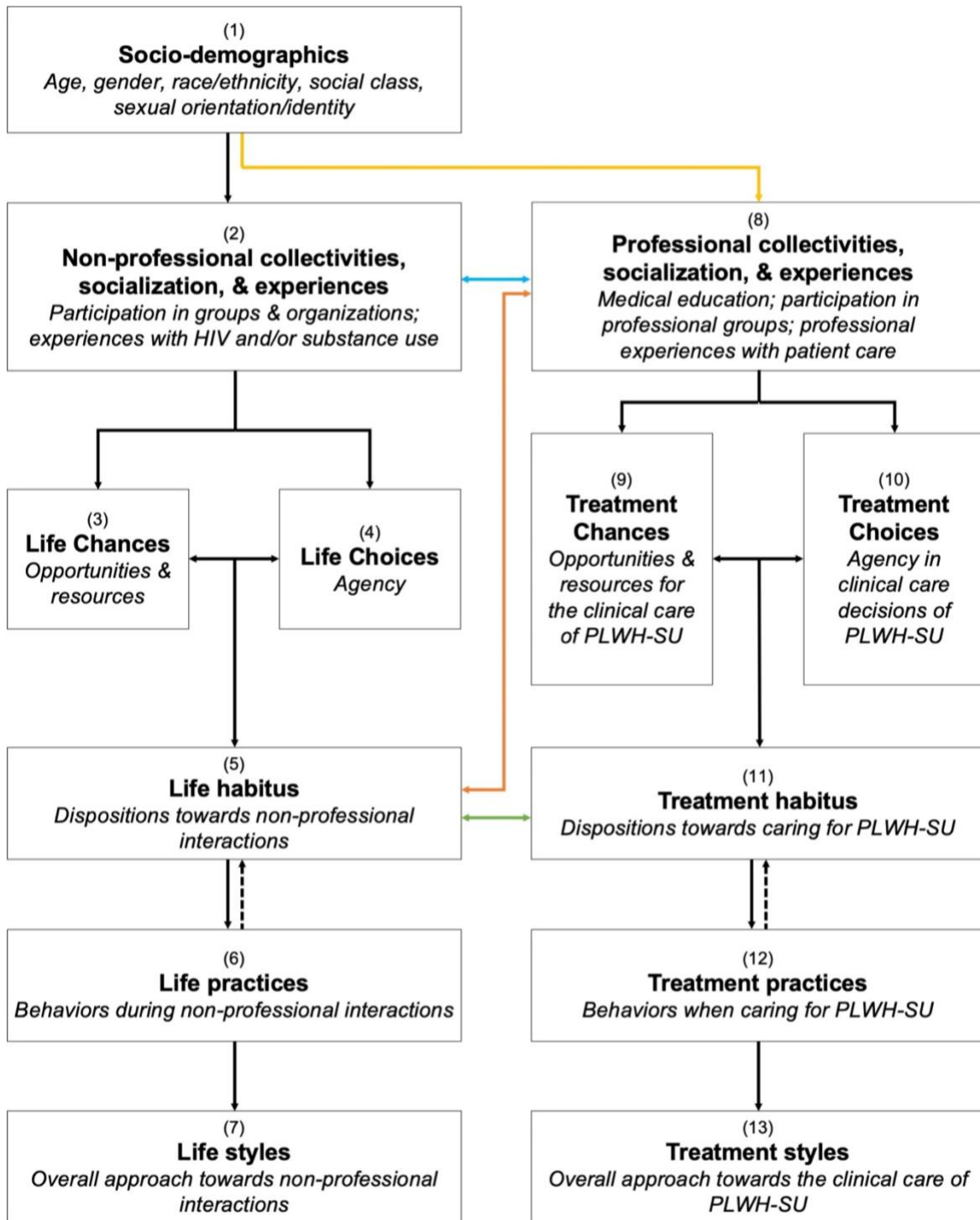
## CONCEPTUAL FRAMEWORK

Adapting Bourdieu's *habitus* and Cockerham's Health Lifestyle Theory, I developed a conceptual framework of medical providers' *treatment habitus*, that is, their dispositions towards caring for PLWH-SU (**Figure 4.1**). Originating from Aristotelian philosophy, *habitus* is "systems of durable, transposable dispositions, structured structures predisposed to function as structuring structures...as principles of the generation and structuring of practices and representation..." [22] In other words, it is a subconscious roadmap that guides individuals' practices. The Health Lifestyle Theory uses *habitus* and the structure-agency debate to reimagine existing approaches to understanding individuals' practices regarding their health. Per the theory, an individual's health-related practices are parts of a distinct pattern based on the life choices (agency) that are made available by the individual's life chances (structure) [23]. Specifically, the theory proposes that through the interactions between life choices and life chances, a *habitus* (i.e., a tendency to act in certain ways) is formed.

In my conceptual framework, medical providers are seen to have a *treatment habitus* that is the source of their practices when caring for PLWH-SU (box 11). The *treatment habitus* is developed from factors that are parts of the medical providers' professional *field* (boxes 8-10) as well as their non-professional *field* (boxes 1-5). A *field* is the social space within which individuals interact with one another in either cooperation or competition [22]. Starting on the left side, my conceptual framework posits that before their medical careers, providers already have a life habitus (i.e., their overall dispositions to act in everyday life), which is formed through the interplay between life chances and life choices. These life chances (i.e., the types and



**Figure 4.1** Conceptual framework of medical providers' *treatment habitus*



quantities of opportunities and resources available within the providers' social worlds) and life choices (i.e., the possible options for providers to enact their agency given their social world) are dictated by a combination of the medical providers' socio-demographics and their non-professional socializations, experiences and participations in collectivities.

Once they begin their formal medical education, providers enter into the right side of the conceptual framework. Through participation in professional collectivities, medical providers are re-socialized, and they earn experiences related to their professional roles. These socializations and experiences in turn influence medical providers' treatment chances (i.e., the types and quantities of resources that are available for caring for PLWH-SU within their workplace and professional world) and their treatment choices (i.e., decisions medical providers can make regarding caring for PLWH-SU given the resources available). The interplay between chances and choices then establishes the medical providers' *treatment habitus*, or their dispositions to act when it comes to caring for PLWH-SU. The *treatment habitus* goes on to guide medical providers' *treatment practices* (box 12), which over time solidifies into *treatment styles* (box 13).

A key feature of my conceptual framework is that medical providers exist within both professional and non-professional realms simultaneously and that their clinical practices cannot be fully understood apart from their lives outside of work. As illustrated by the arrows connecting the left and right sides of the framework, the schools medical providers apply to and attend, the professional groups and activities providers become a part of, and the institutions providers choose to work in are all affected by their socio-demographic characteristics, their non-professional experiences, and their life habitus (arrows from boxes 1, 2, and 5 to box 8). And

while treatment chances and treatment choices have more direct influence over the development of medical providers' *treatment habitus, practices and styles*, their life habitus also plays a role in shaping their professional dispositions and practices (arrow from box 5 to box 11).

The main analytic goals of this chapter are: (1) describe how medical providers understand their approaches to caring for PLWH-SU and how those approaches may have developed, (2) identify multi-level factors that medical providers believe are associated with their *treatment habitus, practices and styles*, and (3) to compare interview findings with the results from the analyses of the HIV provider survey data.

## **METHODS**

### *Study Population and Sample Recruitment*

Eligible participants were medical providers who had previously completed an HIV provider survey that was administered by Columbia University, the University of Miami, Emory University, and George Washington University on their perceptions and practices towards the care of PLWH and PLWH-SU. Following an explanatory sequential design [24], I recruited a purposive sample of medical providers to participate in conversational interviews based on three primary selection criteria: study site (Miami, Atlanta, DC), provider type (physician, nurse practitioner/physician's assistant), and latent profile (Profile 1-Profile 4). The latent profiles represent a typology of the kinds of *treatment habitus* medical providers inhabit and they were previously estimated through latent profile analyses using questions from the HIV provider

survey that measured providers' attitudes, beliefs, and perceptions about caring for PLWH-SU. Profile 1 providers reported low likelihood for deferring ART to PLWH-SU for any reason except patient readiness. Profile 2 providers reported the lowest likelihood for deferring ART for all reasons. Profile 3 providers reported higher likelihood of deferring ART to PLWH-SU with limited ability and had a slightly more negative view of PLWH-SU than the overall sample. Profile 4 providers were more likely to defer ART because of PLWH-SU's socio-demographics, substance use and mental health, and unmet social needs. Profile 4 providers also had the most negative perceptions about PLWH-SU. In addition to the three primary selection criteria, I also accounted for providers' gender and race/ethnicity in order to ensure a diversity of perspectives.

Recruitment took place in three rounds. With each round, selected medical providers were sent an electronic advance letter notifying them of upcoming interviews. The purpose of this letter was to generate interest in the research project before soliciting cooperation in order to increase likelihood of participation [25]. One week after the advance letter, electronic formal invitations were sent to potential participants, and it included a detailed description of the research project and a hyperlink to an online appointment scheduler where providers could reserve an interview time that fits their schedule best. Providers received periodic e-mail follow-ups starting two weeks after the invitation for up to five attempts. During the second and third rounds of recruitment, I enlisted the help of three HIV researchers, one from each study site, to encourage participation. These researchers were involved in the HIV provider survey and are well known in the HIV medical provider community in their respective cities. Medical providers who completed the interview received a \$100 incentive. Human subject research approval was obtained from Columbia University and the University of Miami.

### *Data Collection*

Of the 258 medical providers who completed the HIV provider survey, 145 were invited to participate in conversational interviews, and 36 completed the interview (12 from each study site). Almost all interviews took place over Zoom, an online videoconference platform, between November 2020 and March 2021. One interview took place via telephone at the participant's request. Interviews ranged from 26 minutes to 69 minutes, with an average of 55 minutes. Interviews loosely followed a guide that covered the following overarching topics: (1) work and role as a medical provider, (2) decision and journey to becoming a medical provider, (3) work and geo-political environments, (4) knowledge, perceptions and experiences with HIV, (5) knowledge, perceptions and experiences with substance use, (6) intersections between HIV and substance use, (7) experiences caring for PLWH-SU, and (8) overall style for caring for PLWH-SU. Since interviews were being conducting in the midst of the coronavirus pandemic, I also asked providers how COVID-19 has impacted their work caring for PLWH-SU (**Appendix B**).

### *Data Analysis*

All interviews were audio-recorded and transcribed through a two-step process. First, recordings were transcribed through Otter.ai, an artificial intelligence and machine learning platform [26]. Then, I listened to the recordings and made the appropriate corrections to the machine-generated transcripts. Six interview recordings were sent for professional transcription which also underwent a similar two-step process where a machine-generated transcript was reviewed and modified by a professional transcriptionist. In addition to interview transcripts, I also wrote

research memos immediately after each interview. These memos summarized the interview, noted how each conversation went (e.g., ease of establishing rapport with a participant, interview conditions such as background noise or connectivity issues), highlighted new topics that emerged that should be included in subsequent interviews, and one to three key words that I used to describe each medical provider based on my first impressions following the interview.

To ensure that the richness and the complexity of the interview data are maintained throughout the data analysis process, I used a two-cycle approach to systematically identify findings across the interviews. First, I developed a preliminary coding scheme based on the main objectives of my research, my conceptual framework, and the interview guide. Then I applied this initial scheme to a subset of six randomly selected transcripts. Based on this first cycle of coding, I refined the coding scheme and applied this latest scheme to 18 new and randomly selected transcripts, six from each city, in a second cycle of coding. Saturation was reached (i.e., no new codes were identified) after analysis of these 24 transcripts. Research memos were analyzed separately from interview transcripts after the first cycle of coding to corroborate findings, to detect discrepancies, and to identify additional codes to be added to the refined coding scheme. Research memos were analyzed again after the second cycle to confirm data saturation.

The coding scheme was hierarchical and ranged from the general to the specific. At the top of the hierarchy are categories. These are broad-level concepts that often corresponded to the overarching topics in my interview guide. Right below each category are the sub-categories, which are groups of different ideas that are related to the broader category. At the bottom of the hierarchy are codes, or the specific descriptors that are applied to segments of text. For example,

the category “Work Environment” has as one of its sub-categories “Facilitators of Care,” which has the code “Ancillary Staff” to describe texts where providers mentioned the availability of ancillary staff (e.g., case managers, social workers) as facilitators to care, and the absence of ancillary staff as barriers to care, at their institutions. Another sub-category under “Work Environment” is “Clinic Structure,” which has the code “Appointment Length” to describe texts where providers spoke about the amount of time they have for patient appointments, and how having (or not having) sufficient time for appointments affects patient care.

Once the transcripts were coded and organized using NVivo12 [27], text segments within and across sub-categories were closely reviewed to identify relationships among codes and to abstract higher level themes. For instance, the codes applied to segments of text where participants discussed ART decisions revealed the broader theme regarding the reasons medical providers delay or interrupt ART prescription to their PLWH and PLWH-SU. Similarly, the codes applied to segments of text where participants spoke about how their personal experiences have influenced their practices when caring for PLWH and PLWH-SU supported the broader theme about the effects of patient-provider concordance. To maintain the confidentiality of participants, all findings are presented using pseudonyms.

## **FINDINGS**

Of the 36 medical providers interviewed, all but two were still in clinical practice. One of these providers had transitioned to teaching, while the other had transitioned to research. All but three of the providers interviewed were still practicing in the same city as when they had completed

**Table 4.1.** Medical providers' characteristics

<b>Age</b> (mean, SD)		46 (12.3)
		<i>n</i> (%)
<b>Study Site</b>	Miami	12 (33.3)
	Atlanta	12 (33.3)
	DC	12 (33.3)
<b>Gender</b>	Male	17 (47.2)
	Female	17 (47.2)
	Decline to answer	2 (5.6)
<b>Race / Ethnicity</b>	White, non-Hispanic	15 (41.7)
	Black, non-Hispanic	6 (16.7)
	Hispanic	8 (22.2)
	Other	6 (16.7)
	Decline to answer	1 (2.8)
<b>Provider Type</b>	Physician	28 (77.8)
	NP, PA, Nurse Midwife	8 (22.2)
<b>Field of Practice</b> †	Primary care	12 (42.9)
	Infectious diseases	15 (53.6)
	Other	1 (3.6)
<b>Years of PLWH Care Experience</b>	Less than 10 years	15 (41.6)
	11-20 years	7 (19.4)
	More than 20 years	14 (38.9)
<b>Practice Type</b>	University hospital / clinic	16 (44.4)
	Community health center / FQHC	9 (25.0)
	Private practice	4 (11.1)
	Other	7 (19.4)
<b>Practice Size</b>	Less than 200 patients per month	19 (52.8)
	200 or more patients per month	17 (47.2)
<b>Latent Profile</b>	Profile 1	11 (30.6)
	Profile 2	12 (33.3)
	Profile 3	5 (13.9)
	Profile 4	8 (22.2)

† Applies only to survey respondents who are physicians (n=28).  
FQHC = Federally qualified health center



the HIV provider survey. Providers who had relocated were asked to speak on both their current clinical experiences as well as their previous clinical experiences working in the study city. Approximately half (47%) of the providers identified as male, 42% identified as non-Hispanic White, and the average age was 46 years old (range = 30-71). Over three-quarters (78%) of the providers were physicians and among them, 54% were infectious disease (ID) specialists. Nearly half (44%) of the providers worked in university-affiliated hospitals/clinics. A similar proportion (47%) worked in large practices with over 200 patients per month. Thirty-nine percent of providers had over 20 years of experience caring for PLWH; followed by 28% with fewer than five years of experience. In terms of their *treatment habitus*, 31% of the providers were in Profile 1, 33% were in Profile 2, 14% were in Profile 3, and 22% were in Profile 4 (**Table 4.1**).

#### *Theme 1: Availability of and Access to Resources*

During interviews, medical providers frequently spoke about resources they believe have facilitated their ability or capacity to care for PLWH and PLWH-SU. The most common resource that providers brought up was ancillary staff, such as case managers, social workers, and care coordinators. Non-human resources that providers mentioned included translation services, travel vouchers for patients, and on-site pharmacies. Mental and behavioral health specialists were often brought up as a resource when providers spoke about strategies to engage PLWH-SU in care. Resources were most abundant for providers who practiced at federally qualified health centers (FQHC) that received funds from the Ryan White HIV/AIDS Program, but they can be distributed unevenly across different sectors within the same clinic. For example, Ngoc (female, Asian, early-60s, Profile 4) is an ID physician at a women's HIV clinic in Atlanta that is part of a

larger health center that also includes a general HIV clinic and a pediatrics HIV clinic. She spoke about the differences in the availability of ancillary staff across the three different clinics:

*So the peds and adolescent...so they have two or three social workers assigned to their patients. Two to three social workers, plus their own psychiatrist, plus their own case manager. The rest of the clinic, we only have case managers. For the women's clinic we have two assigned to us, and they handle the 1,000 plus women. And then in the main clinic, I think they have five or six case managers that can do the, the men, which is about 4,000, 4,500 people.*

Medical providers also attributed the availability of resources to other factors, such as leadership buy-in, participation in research, and even providers' professional networks. Simon (male, non-Hispanic White, mid-40s, Profile 2), an ID physician who is also the Chief Medical Officer at an FQHC in DC, credits his "CEO and COO [who] are very good at being able to procure grants to help support a lot of [the work] that [they] do." Vincent (male, Hispanic, late-30s, Profile 2), a physician's assistant in Miami, regards the on-site laboratory that exists as the result of his clinic's extensive participation in HIV-related research as an important resource in his clinical interactions with PLWH and PLWH-SU. He recounts a clinical interaction with a PLWH where he was not able to utilize this resource:

*That particular patient needed to do lab work in LabCorp, so we couldn't do lab work here, which is very easy because I just send it to the lab work here next door...Sending to LabCorp is complicated because also, I have to get some transportation; so I have to do that too. Like, get transportation, fill out the form, send it to insurance. It was very challenging. I spent with that patient, I probably spent one hour just with that patient.*

Carmen (female, Hispanic, late-30s, Profile 2), a nurse practitioner at a university-affiliated HIV clinic in Miami, spoke about how the professional reputation of one of the physicians at her clinic can help PLWH-SU gain entry into substance use rehabilitation programs:

*We have a psychologist that they actually help us when it comes to mental health... We also used to have two social workers [who were] able to assist with [getting PLWH-SU into mental health and substance use programs] and are more knowledgeable about resources when it comes to referrals for these types of places. Doctor X, because he works with a lot of [PLWH-SU]. They also have a lot of contact when it comes to different places in Miami, that they...like if you know somebody, you're probably more likely to get the referral versus if you don't really know.*

Access to resources can support medical providers' *treatment habitus* and *treatment practices* when caring for PLWH-SU in two different ways: treating substance use as a distinct condition from HIV or treating substance use as intertwined with HIV. Ngoc, the ID physician who I had introduced earlier, takes advantage of the behavioral health program co-located in her clinic and relies on the behavioral health specialists to manage her PLWH-SU's substance use while she manages their HIV. She reasons:

*My contribution is to talk to the patient [to] figure out like, is there any trigger, try to avoid the trigger, and then send them to Center for Wellbeing, right? It's like if you have a toothache, I won't be able to help your toothache. I have to send you to dental and the dentist who's trained to take care of your toothache...Same thing [for when] I have a patient who is using drugs. What I can do is talk to them, and then have them agree to me to send them to Center for Wellbeing. But what else can I do?*

On the other hand, some providers like Cesar (male, Hispanic, late-40s, Profile 2), an ID physician in the same clinic as Ngoc but treats mostly adolescent, takes a multidisciplinary approach and incorporates psychiatrists and ancillary staff into his plan of care for PLWH-SU:

*There are a lot of challenges [to caring for PLWH-SU]. In terms of...I think we always need to take these patients in a multidisciplinary approach...The majority of patients have a lot of conflicting factors coming together, so...the way you approach the patient, in my mind, is in a multidisciplinary way. I always link my patients to psychology, regardless if they want or not, at least to get an assessment. They have a bunch of social needs that need to be surrounded, they need to be helped with. Especially my population is sort of trying to become an adult...And they don't have the skills or the education, or the way to navigate certain things that I think social work helps them with in the clinic.*

## Theme 1.1 Time as a resource

Time is a specific type of resource that was discussed during almost all of the interviews. Like other forms of resources, the availability of time is not equally distributed amongst medical providers. Those who have their own private practice tended to have the most flexibility given they have the ability to set their own work schedules. Medical providers who practice at FQHCs have the least time, with wide variations across organizations. While some FQHCs have 15-minute appointments, others have 30-minute appointments. And while some FQHCs give providers administrative time to complete tasks such as ordering laboratory tests and completing prescription refills so as to not take time away from direct patient interaction during visits, others do not unless a medical provider is of a certain position (e.g., Chief Medical Officer).

Providers spoke at-length about how having sufficient time (or not) for clinical encounters can dictate how they approach their interactions with PLWH with or without comorbid substance use. Spencer (male, non-Hispanic White, early-30s, Profile 4) is an ID physician in Miami, and he described how he adjusts his approaches to clinical encounters with PLWH depending on the number of patients who show up to his clinic on a given day:

*I sort of allow the appointments to expand to fill the time that's available. And so, in that sense it's a bit like Russian Roulette. If you show up on a day when nobody else does because it's raining, then you're gonna get a really detailed, nice, long warm encounter. And if it's a day when everybody shows up, then it's a little bit more [about getting] the things done that I think are the bare minimum...The way that clinic is set up is extremely not patient centered. Basically, all of the patients are scheduled for 12:30 or 1:30, and then it's sort of first come first serve. When they check-in, I'll see them in the order that they check-in. So you know, if everyone shows up all at once, like the first person I'll see right away and then everyone else is just sitting and waiting until I go through the people who are there. So there's no strict structure...it's very much I sort of set the pace.*

For Wendy (female, non-Hispanic Black, early-40s, Profile 4), a primary care physician (PCP) at a community health center in DC, she approaches her 20-minute patient appointments in a “regimented way” to ensure that she does not run behind schedule:

*A lot of times I kind of already know what we need to do. I've already looked at the labs. Like I, as soon as you walked in and we got your, your vital signs, I already know what we need to do...So it's really, I go to the room to negotiate, you know? 'What do you want? What are you willing to do? What do you actually think is a problem?' ...So yes, of those 20 minutes, if they're pretty complex, but they're in agreement where we're flowing, then okay. I can spend half that time in the room and the other half...honestly, I need it to do all the technical stuff... If it's someone who I have to negotiate things with, it depends on how intense those negotiations are...I came into medicine during the time of efficiency, so I'm very good at it. I typically only have three encounters where I couldn't get it all done during that period of time and I have to finish it up at the end of the day. But for the most part, I'm able to kind of wrap things up in that timeframe.*

Gina (female, Asian, early-40s, Profile 1) is an ID physician at a university-affiliated clinic in Atlanta. She described the difference between the 30-minute appointments at her current clinic versus the 15-minute appointments at her clinic during residency:

*There's also a couple of things about the clinic that allow [trust with PLWH-SU]. For example, as I mentioned, like half-hour slots. For new patients, I want to say even have one-hour slots. So just, so for example, if a patient shows up 25 minutes late, we can still accommodate them and work them in. Again, if they're someone who's got a substance use issue and they're kind of a mess for reasons associated with that, I can still see them in the clinic. Whereas my old clinic, we have these 15-minute slots. And so [late patients] would just be turned away, like 'you missed your visit.' And so that becomes this vicious cycle of the clinic won't accommodate them, they won't accommodate the clinic. The clinician is resentful because they're like, 'here I am, busting my chops to come in day-in-day-out to the clinic, and I'm ready for you, and you don't even show up.' That creates then, disenchantment on the clinical care of the patient. And the patient is like, 'wow, you can't even wait 15 minutes for me?' And it's just set up to fail in the system.*

Gina's account illustrates that beyond individual patient encounters, insufficient time can lead to resentment and mistrust between providers and patients, which can have long term negative consequences for PLWH and PLWH-SU's retention in care.

### *Theme 2: Delaying or Interrupting ART Prescription*

Nearly all of the medical providers named ART non-adherence as a major challenge when it comes to caring for PLWH-SU as opposed to PLWH not living with substance use. When asked about how they have dealt with PLWH-SU's medication non-adherence, many providers discussed reminders such as alarms, pill boxes, or a note by the front door. Providers also spoke about educating patients on the importance of adherence, at times eliciting the help of behavioral health providers or PLWH-SU's friends and family. Interestingly, several providers mentioned, without prompting, that they have delayed initiating and/or have temporarily stopped prescribing ART to PLWH-SU as a way of managing non-adherence.

#### Theme 2.1 Delaying ART initiation

Medical providers' main reason for not starting PLWH-SU on ART was that they were not sure that the patients can adhere to the medication. Brandon (male, non-Hispanic White, late-40s, Profile 4), a nurse practitioner in DC, talked about his reasons for delaying ART to PLWH-SU who have a history of non-adherence and how he puts PLWH-SU on a two-week trial in order to determine whether to continue prescribing ART to these patients:

*So we already know, we have a patient who for one reason or another has not had the best track record when it comes to adherence. And so very often, it's obvious what that is. Are we going to effectively be able to fix those issues, or at least address them sufficiently for the patient to be adherent? It's a judgement call. Because with HIV meds, it's better to just be off them entirely than to take them completely intermittently, because of the way you can develop resistance associated mutations...It's not all about getting that first dose of pill back into somebody if we really think they're going to struggle with adherence...So one thing that we do, we may only give 7-14 days [of medication] initially and say, 'we're gonna try this out, see how it goes. If you can come back in two weeks, that's a great sign that this is something that you want to continue to take.' And then we can talk about long or larger disbursements of medications.*

Camilla (female, Hispanic, early-50s, Profile 3), a pediatric ID physician at a hospital-affiliated clinic in Miami, has at times chosen to not prescribe ART to her adolescent PLWH-SU who she believed would be non-adherent in order to preserve options for first-line ART in the future:

*There is a lot, I mean, there's a lot written on adherence; proposals, and solutions, and groups, and that. But in real life, there are things that for a specific patient may just not work and that's it. So sometimes what I do is...I don't try [prescribing the] new medications. I try not to blow options because of the few cases that I have seen that somehow, they mature, and they really need a good drug. And I don't want them to waste that being resistance [sic]...I can get the TRIUMEQ, like boost them with whatever. In a week they will be undetectable, but the next week they will not be taking anything.*

Embedded within both Brandon's and Camilla's accounts for delaying ART to their PLWH-SU is a fear of viral resistance as a result of inconsistent ART use, which as Felicity (female, non-Hispanic White, early-30s, Profile 3), a physician's assistant at a private practice in Atlanta explained, can have negative impacts on PLWH-SU's medication adherence in the longer term:

*I would much rather someone be off of it. I mean, it's not good, it's not really what you want. But the problem is that once you miss...People are on newer medications, right? And if they're on these single tablets, a lot of them have similar, we call them backbones. So, two of the main NRTIs and NNRTIs, they're in all of them. So once you knock out, or once you develop resistance to that, you have to go down other avenues. And a lot of times, that means more pills. More pills typically mean less compliance. Especially in a*

*group that's already not doing well with compliance...It's ultimately just going to make things a lot harder.*

## Theme 2.2 Interrupting ART prescription

In addition to delaying prescribing ART, several medical providers also talked about interrupting ART prescription for some of their PLWH-SU. Providers' primary reason for stopping ART prescription is to maintain a long-term therapeutic relationship. In discussing his most challenging patients, Will (male, non-Hispanic White, mid-60s, Profile 1), a PCP at a hospital-affiliated clinic in Atlanta, spoke about continuing care with PLWH-SU that have stopped ART:

*The ones that pop into my mind are transgender women, crystal meth addicts. I've got three who are very similar in that they are mostly out of care, occasionally in care, get most of their care in the emergency department when there's some kind of crisis. Not amenable to help. <Long pause> And I'm, I always am willing to continue their [gender affirming] treatment. Regardless of whether they're continuing their HIV treatment or not, I'll help them with their hormone treatment. And sometimes that helps keep them somewhat engaged in care that might be there.*

Owen (male, non-Hispanic White, late-30s, Profile 1), a PCP at a university-affiliated clinic that serves mostly retired professionals, explained that he would stop prescribing ART to PLWH-SU if he learns the patients have stopped taking the medication as a way of encouraging patient-provider communication and shared decision making:

*I don't have a lot of patients who are non-compliant with medication, I think. I mean, obviously I probably do, just statistically speaking. But, you know, if they're not going to take a medication, I'm not going to prescribe it. And I tell them, if they have any trouble with medication to stop it. And hopefully, you know, if they're able to let me know, let me know what happens so that we can figure out what else to try. So I guess, I guess what I'm trying to describe is shared, shared decision making.*



While neither Will nor Owen were the ones to initiate stopping ART prescriptions for their PLWH-SU in the above examples, their practices demonstrate their awareness of their patients' social contexts (e.g., understanding the importance of gender affirmation care for transgender patients, understanding that patients can have barriers to adhering to ART) and their recognition of the value of maintaining a strong patient-provider relationship over achieving optimal HIV disease management, which is usually just one part of their patients' medical needs.

*Theme 3: Providers' Descriptions of and their Practices towards Caring for PLWH-SU*

Through reviewing the interview transcripts, I discovered that there were often subtle differences between what providers said, how they said it, and what they do; that is, their practices did not always reflect their words. One of the clearest examples is in how medical providers described PLWH-SU when speaking to me, the researcher, versus how they recounted their practices when caring for PLWH-SU. Nearly all of the providers used negative terms when referencing PLWH-SU during the interviews, describing them as “[a] huge mess,” “problematic,” “disorganized,” and even “hostile.” A few providers also described PLWH-SU as people who “cannot manage their lives,” who “do not function,” and who “do not want to be treated.” However, only one of the providers who used negative terms to refer to PLWH-SU also described negative (i.e., stigmatizing, discriminating) practices in their accounts of caring for PLWH-SU. In fact, providers remembered extending beyond standard-of-care procedures when caring for PLWH-SU. Tamera (female, non-Hispanic Black, early-50s, Profile 4) is a private ID physician in downtown Atlanta whose practice serves primarily poor PLWH and PLWH-SU of color. She remembered when she used her own money to help PLWH-SU with their unmet social needs:

*Tamera: You know, a few rarely can manage both [HIV and substance use]. Usually, it's a huge, just mess; it's the best way to say it. And you know, you're having to battle two Goliaths. And, you know, it becomes impossible to do.*

*Interviewer: And what have been some of the ways that you've battled these Goliaths?*

*Tamera: Utilizing colleagues who have a special area of expertise. Sometimes we, you know, come out of pocket for certain resources; often times, actually...*

*Interviewer: So, when you say you have "come out of pocket" to get resources for patients. What kind of resources are you talking about?*

*Tamera: I have paid for a week in a hotel for someone just to bridge them until they could figure things out. Or utilized hotel rewards points... We've gotten food, we have gotten clothing, we've just given money... We have a couple people who have some Airbnb properties, [so] we've even gotten a couple nights here and there for people.*

Olivia (female, Asian, late-30s, Profile 1), an ID physician at a public hospital in Atlanta who described PLWH-SU as "unavailable" and who will "just go [missing in action]" recounted using financial consequences as a means to help a patient engage with his HIV care:

*I have a patient, he's probably in his 40s, meth, IV meth user... So he was one of these guys, kind of MIA, couldn't get ahold of him, didn't come for his labs... Had a lot of other kind of social, interpersonal stuff going on as well. Would stay basically holed up in his house, doing meth and ordering takeout. He was just like, sustained on delivery food, when he would remember to eat or get food... This is a patient I've known for, since I've been here. And he and I have a good rapport. And I've seen him in times of sobriety as well. And what we ended up doing, and I hate to admit this but, I mean I hate it but then also it really worked. We implemented what's called a fiduciary for him, which is basically... he lost, or was in the process of losing his control to his money, essentially... Now he's doing great. We've seen each other in clinic. He has a dog; he was able to finance a car; he's clean; he's engaged with mental health and substance use treatment clinic. And he turned his stuff around.*

*Theme 4: Motivations for a Career in HIV Medicine*

To begin to understand how medical providers come to develop their approaches to caring for PLWH and PLWH-SU, I first wanted to understand why they chose a career in medicine. Most medical providers credited a desire to help other and to have a career that is meaningful as their primary reason. A few providers stated they chose medicine because it is a respectable profession that offers long term job security. And a few providers stated that a career in medicine was expected of them because of their cultural backgrounds or because they have family members who are medical providers.

Providers also spoke specifically about their decision to specialize in caring for PLWH and PLWH-SU. For several providers, it was timing; they had started their medical training at the start of the HIV epidemic in the U.S. and were trying to fill an area of need. For other providers, the motivation is personal. Pablo (male, Hispanic, late-30s, Profile 1), a PCP at a community health center in Miami, spoke about how his identity as a gay man and having friends who are living with HIV served as his reasoning to care for PLWH:

*I really went to medical school just to do what I'm doing, which is HIV care. That was my passion. So, I followed my heart. So that's really the only reason why I did it...I'm a gay man. And as you know, the number one affected population in the U.S. is gay men. So yeah, growing up a teenager, I had a group of six friends. And out of those six friends, I'm the only one who is HIV-negative. So, all the other friends became positive. Some of them didn't tell me, but I found out about it because, you know, friends talk. Two of them openly told me. So it's really serious in the gay community, to become infected. So that's really what took my mind in that route.*

For Thomas (male, non-Hispanic Black, early-40s, Profile 2), an ID physician at a university-affiliated clinic in Miami, while it was a routine with his grandmother that inspired him to pursue medicine, it was a research experience that motivated him to now care primarily for PLWH-SU:

*I think that, and it's particularly salient to me when I walk to my office, which seems 18 million worlds away. It's the same street that I used to walk as a little boy with my grandmother when we were going to feed homeless people. So I think that whole, her service as a nurse in this city and my seeing the care that she was able to provide for the underserved, was really instilled in me at a young age that I wanted to help people...I didn't know that my focus was going to be on people who inject drugs; I probably thought I was going to work with MSM...I was doing my capstone [project], and what my team, what they tell me is that I was a different student from the first day that I started doing that to the end. They say that the amount of pain that I witnessed, they could see the changes on my face...I would go into alleys and see young people injecting with blunt syringes into their necks, like crying. It was so much to see and so much to witness...I got home, and I saw down, and I was like, "Oh my God, how are we as a society allowing that type of suffering to happen?"*

Several providers talked specifically about how their own racial backgrounds have served as a motivator for where they practice. For Helen (female, non-Hispanic Black, early-60s, Profile 1), a PCP who grew up in a predominantly Black neighborhood in Brooklyn, NY, witnessing, at 10 years-old, the delay of an ambulance after a vehicular accident near her home solidified her commitment to become a physician, and has kept her practicing at the same community health center in a "poor, Black neighborhood" in Miami for the past 34 years:

*The group [of kids on roller skates] grabbed onto the back of the bus at the top of the block, and as they rolled down [the hill] laughing and screaming, the bus abruptly stopped. The experienced riders adjusted and quickly let go, but the new girl lurched back and fell onto the pavement...There was blood coming from her head, she didn't open her eyes. We waited for the ambulance, and waited, and everyone said, 'where is the ambulance?' The police finally arrived, and an older Black American man said to the cop, 'you know ain't no ambulance coming. They never send no ambulance here...' I was 10 years-old at the time. I knew this wasn't right. I know there was something more we could do. The something I could do was become a doctor. I became an internist and committed my career to caring for those we often call the underserved, the vulnerable; like those neighbors I had when I first immigrated to America.*

For Abeni (female, non-Hispanic Black, late-30s, Profile 2), a PCP in DC who immigrated from Nigeria to the U.S. after medical school, it was one of her first interactions with a Black patient

that made her become aware of racism in medicine and led to her commitment to work in an FQHC that serves mostly patients of color:

*I did my training in Buffalo, New York...So Buffalo was somewhat segregated in terms of, you know, some parts of the city were predominantly Black, and then parts of the city were predominantly White. In the clinic, most of our patients were African American. For me, I'm not here from the U.S. originally, I'm from Nigeria, so we had a pretty homogeneous population...I remember a patient, and the impression I got from her was that she appreciated being treated by a Black doctor. That was totally foreign and new to me...And so as I began to sort of understand some of the challenges in terms of healthcare access for people of minorities and people of the African American race. I'm like, okay, I think my services might be best served...I feel like more, like, I'm doing something more worthy, going to where the need is the greatest...I'm trying to be of service to my community, my adopted community.*

#### Theme 4.1 Concordance between Provider and Patient

Several providers spoke the role of race in providing care to PLWH and PLWH-SU. Racial concordance between PLWH and PLWH-SU and their medical providers seem to provide a layer of understanding that is reflected in how providers talk with their patients. For Helen, who identifies as Jamaican and whose PLWH and PLWH-SU are mostly older Black and/or Caribbean men and women, sharing a similar racial identity with her patients gives her implicit permission to be confrontational when needed:

*I use a lot of motivational interviewing, which is non-confrontational...[But] there are times that I do confront, because culturally, some groups just...I'm Jamaican, and [the patients] know a Jamaican will tell you as it is. But I ask permission though; "is it okay if I just tell you what I think?" This is why I didn't do psychiatry [where they] have you work it out. [I say,] "I'm not a psychiatrist, so is it okay for me to just cut to the chase and tell you?"*

In the case of Selena (female, Hispanic, late-50s, Profile 2), an ID physician at a community health center in Miami who treats mostly Hispanic PLWH, racial concordance with her patients has the opposite effect. Rather than being directive, the shared language and culture between Selena and her PLWH and PLWH-SU facilitate an empowerment approach to care:

*I try to talk with the patient in a language that they can understand me. Try to put down all the barriers, give confidence to the patient to talk, to tell me whatever is of concern for this patient...Doing the things the more easy [sic] for the patient to open the channels that he feel confident to talk to with me.*

In addition to racial concordance, providers also spoke about other types of concordance with PLWH and PLWH-SU that have helped facilitate patient interactions. As a former substance user, Will, who I had introduced earlier, sometimes shares his own history of substance use with PLWH-SU in order to motivate his patients to seek substance use treatment:

*If somebody really wants to stop, I'll offer them referrals to our substance use mental health team. Or, you know, have a list of Narcotics Anonymous meetings in Atlanta; I'll give that to patients. I'm in recovery myself, and I'll sometimes share that with a patient...and so I'll point that out and encourage them to, you know?*

Woodrow (male, non-Hispanic White, early-70s, Profile 2), a private ID physician in DC who identifies as gay and whose PLWH are predominantly non-Hispanic White men-who-have-sex-with-men, stated that the shared sexual identity allows for honest discussions between provider and patients about intimate topics such as sexual practices:

*Yeah, well, this is one place where being a gay man with gay patients, we can really have very frank conversation about what you do sexually, how often you do it...And yes, I will be very frank, use crude sexual terms. You know, the CDC wants us [to say] 'do you insert penis into anus?' No, you can't do that with a patient. It's 'do you bottom, do you top?' Once you set that standard with the patient, they are generally very open with you.*

### *Theme 5: How Medical Providers Comprehend Their Care of PLWH-SU*

When asked to name or describe their overall style to caring for PLWH and PLWH-SU, medical providers commonly referred to themselves as their patients' "coach," "advisor," "teacher," "guide," and "friend." A few providers even referred to their patients as "family." Although all of the participants' descriptions echoed sentiments of person-centered care, they did not always align with the ways medical providers recounted their past clinical interactions with PLWH and PLWH-SU throughout the interviews. In fact, recollections revealed that while some providers were indeed person-centered in their interactions with PLWH and PLWH-SU, others have a provider-centered approach to caring for PLWH and PLWH-SU.

#### Theme 5.1 Providers with a person-centered approach to care

Medical providers who take on a person-centered approach to care prioritize PLWH's and PLWH-SU's values and helping patients live the healthiest lives possible given the patients' circumstances (e.g., active substance use, housing insecurity, lack of insurance). Thomas, the ID physician in Miami who predominantly treats PLWH-SU, recalled an encounter where he educated a cocaine-using PLWH who had been diagnosed with hepatitis C on how he could minimize his risks for re-infection:

*There's a patient, he didn't inject drugs, but he had hepatitis C. I was able to figure out that it was likely transmitted through cocaine use and sharing straws and dollar bills. So, we treated his hep C, and then I started talking to him about how when he uses cocaine to make sure he has his own straw. So go to McDonald's to get a straw, use his own straw the entire night because we're going to cure his hep C, and we don't want him to be reinfected. The resident just couldn't believe that we had that brief few minutes of harm reduction education on top of everything else [during the visit].*

Haley (female, non-Hispanic White, early-50s, Profile 2), an ID physician at an FQHC in DC, remembered strategizing with her hepatitis C co-infected PLWH-SU in order to help them to have the best chance at qualifying for antiviral treatment:

*As [new hepatitis C treatment] became available, a lot of the insurers wanted urine drug screens in order to qualify for treatment. And so, I was very upfront with my patients. We'd have open conversations like, 'this urine needs to be clean, so let's talk through how we're gonna get this to be clean. I don't want to get it from you today if you think it's not going to be clean.' So I think, just trying to be as judgment free as possible.*

In both of the examples, Thomas and Haley chose not to focus on their patients' substance use but focused instead of treating their hepatitis C infections. Moreover, these providers worked with their PLWH-SU to minimize further harm despite knowing that these patients were going to continue their substance use.

#### Theme 5.2 Providers with a provider-centered approach to care

In contrast to those who take on a person-centered approach, medical providers who have a provider-centered approach towards caring for their PLWH and PLWH-SU believe that patients should follow the advice of their providers and that patients should act in ways that will help them achieve the best outcome (e.g., optimal ART adherence, viral suppression). These providers frequently expressed defeat or frustration and used terms like “helpless” or “futile” during interviews to describe past clinical encounters with PLWH and PLWH-SU. Abeni, the Nigerian immigrant PCP in DC, remembered a PLWH during her fellowship years whom she tried to convince to disclose his HIV serostatus in hopes that it would help him adhere to his ART:



*I remember this guy very well. He wasn't taking his meds; he would come into hospital with one [opportunistic infection] or another...My goal was to get a sense of like, what do you think is preventing you from taking your meds...So one thing that I think I was able to identify, even though he didn't think that, was that he hadn't really told anybody about his HIV status...It was really hard for me to really fully get him to realize that...You can't really always help everybody. You think that oh, I have all this knowledge...But at the end of the day, you just have to understand that, at the end of the day, you know, sometimes you just, you can't really help everyone or save everyone. Some people don't want to be helped or saved.*

Despite stating that he did not agree with her assessment, Abeni still tried to impose her own reasoning for this PLWH's ART non-adherence (i.e., he had not disclosed his HIV status) onto the patient. And when the PLWH did not agree with her, Abeni concluded that it was because the patient did not want to be helped or saved. When asked about what she thought were the most rewarding and challenging aspects of her work, Camilla, who was quoted earlier for delaying ART initiation for her adolescent patients, expressed annoyance towards her PLWH who are non-compliant, especially those who may tell her otherwise:

*The other frustration would be the problem with compliance. Many patients are not adherent, or they postpone treatment, or decide not to deal with their diagnosis, denial and stuff, and reject medications. So things that there is not much we can do about it. There are techniques and stuff, but after you have tried for so many years, in so many different ways, it's self-determination, that's it. There is no more to do...That's self-determination, I learned that word a lot. Like that's it. Like you cannot force someone to do the things that, that even though they say they want to do, their actions are showing that they don't.*

### Theme 5.3 Medical providers sometimes switch approaches

In some interviews, medical providers recalled instances when they have switched their approach to care. Will, who described himself as respecting patient autonomy and generally adopts a

person-centered approach to care, remembered a particular PLWH for whom he decided to adopt an authoritative tactics after speaking to the patient's mother:

*He actually is taking his medication now. But here's how it happened. I knew he dropped out of care, and I called his home to talk to him, and I got his mother. And he had previously given me permission to talk to her, so we had a talk. And she said, "you know he's, he's gonna kill himself." She said by his being out of care he's killing himself. She said, "and I can't, I can't watch it." And so I decided to change course, strategy with him a little bit. Usually, I'm very, I take sort of a consultative role with patients. Like, you know, I'm a counselor, I'm an advisor, I give them information, I tell them what their options are, I tell them what the likely consequences are of one course, of one decision or another on their part. But I don't really usually pressure people to do things. But I decided to pressure him. And I said I couldn't, I couldn't just sit and watch him destroy himself like this. I said, "you need to take your medication, you must take your medication." And he responded to that. And he has been for the past four or five months.*

Walter (male, non-Hispanic White, late-50s, Profile 3), an ID physician in DC who had recently left clinical practice, explained how he would adopt a more directive approach to caring for PLWH-SU when treatment options become limited:

*Let's say we're starting a HAART regiment. I give them multiple choices. I give them all the recommended first line choices and I don't tell them, "This one is going to be the one for you" or anything like that. I usually give them the pros and cons of each of the choices and let them decide which one fits best into their life. Because I think if you, if you involve the patient in the decision making, I think there's a lot more buy-in by the patient than, versus me just telling them. Now if they're, if they're down, if they have a very resistant virus and they have, they're on lots of medicines [that can] interact with [ART], then I'm gonna be more directive about "this is the regiment we need to go with you." But for the most part, I really try to involve them in the decision making.*

Both of these examples showed that although Will and Walter took on more imposing methods to caring for these PLWH and PLWH-SU, their intention behind their practices remained person-centered (e.g., contextualizing the patient in his relationship with his mother, preventing potential harmful drug-drug interactions in patients).

## DISCUSSION

Conversational interviews with 36 medical providers from Miami, Atlanta, and DC provided rich data that further elucidated how medical providers perceive their *treatment habitus* towards caring for PLWH and PLWH-SU, and how *treatment habitus* guides medical providers' practices when caring for PLWH and PLWH-SU.

### *Medical Providers Exhibit A Spectrum of Treatment Habitus*

Further analysis and synthesis across findings showed medical providers in my sample exhibit a spectrum of *treatment habitus* that can be defined by two primary characteristics: their intentions (person-centered vs. provider-centered) and their methods (informative vs. directive). At one end of the spectrum are medical providers who are person-centered in their intentions and informative in their methods. These providers care for PLWH and PLWH-SU as whole individuals and are not focused solely on HIV disease management. And they often take on the role of a technical expert or advisor in patient-provider interactions. Medical providers with this type of *treatment habitus* include Haley, who spoke about strategizing with her PLWH-SU to get clean urine samples in order to qualify for hepatitis C antivirals. It also includes Thomas, who decided to pursue a career caring for PLWH-SU after witnessing their suffering and who spoke about educating a PLWH-SU on how to prevent hepatitis C re-infection when using cocaine by obtaining a straw from McDonald's.

At the other end of the spectrum are medical providers who are provider-centered in their intentions and directive in their methods. These providers are concentrated on managing their PLWH's and PLWH-SU's HIV disease progress and their methods for achieving optimal HIV outcomes do not necessarily reflect their patients' values or preferences. Medical providers with this type of *treatment habitus* were also likely to express frustration when describing experiences with PLWH and PLWH-SU who do not comply with their medical advice. Examples of medical providers with this type of *treatment habitus* include Wendy, whose regimented way of preparing for patient visits ahead of time and approaching clinical encounters as negotiations showed she prioritizes completing necessary medical tasks over understanding her patients' needs or preferences given their individual contexts. Another example of a medical provider with a provider-centered and directive *treatment habitus* is Brandon, whose description of imposing two-week ART trials with PLWH-SU with a history of nonadherence showed that patients' ability to manage their HIV infection and to comply with medical instructions play a large role in his care decision-making.

Between the two ends of the spectrum are medical providers who have a *treatment habitus* that is person-centered but directive or a *treatment habitus* that provider-centered but informative. An example of a medical provide from the sample who has a person-centered but directive *treatment habitus* is Cesar, the adolescent ID physician in Atlanta who showed his person-centered intentions when he emphasized the need for a multidisciplinary care approach to surround his PLWH and PLWH-SU with the help they need. However, his way of referring every patient to a psychiatrist regardless of the patient's preferences showed his use of directive methods. An example of a medical provider from the sample who has a provider-centered but informative

*treatment habitus* is Ngoc, who demonstrated her provider-centered intentions when she analogized referring her PLWH-SU to behavioral specialists for their substance use to referring her patients with a toothache to a dentist. But rather than automatically referring her patients (i.e., being directive), Ngoc showed her use of informative methods and her understanding of patient's choice when she specified that her patients have to agree to be sent to the specialist. Like other participants who are provider-centered, Ngoc also expressed exasperation towards her PLWH-SU when she said, "what else can I do."

Along the spectrum of *treatment habitus* are also medical providers who have a flexibility in their intentions and their methods towards caring for PLWH and PLWH-SU; that is, they can switch between being person-centered and provider-centered and/or being informative and directive depending on the patient. In addition to Will and Walter, another example of a medical provider with this type of flexible *treatment habitus* is Helen, a person-centered and informative provider who spoke about regularly using motivational interviewing techniques with patients, who can also become confrontational with PLWH and PLWH-SU who share her racial and cultural background. While most of the medical providers in my sample who have this flexibility in their *treatment habitus* switch their methods of providing care while remaining person-centered in their intentions, a small number of providers demonstrated they have a *treatment habitus* that allows them to switch between being person-centered and being provider-centered. An example of this type of medical provider is Spencer, who stated that when his clinic schedule is more relaxed, he is able to have "really detailed, nice, long, warm encounters" with PLWH and PLWH-SU (i.e., he can be more person-centered). But when the clinic schedule is busy, then

Spencer's encounters would be "more [about getting] the things done that [he thinks] are the bare minimum (i.e., he can be more provider-centered).

Studies have shown that viewing and caring for patients holistically and addressing seemingly non-clinical issues can significantly improve patient outcomes [28,29]. My findings suggest that despite efforts to improve patient-provider communication away from traditional paternalistic models, they continue to exist in a fraction of medical providers. Provider-based interventions aiming to improve the care of PLWH-SU may wish to target reframing providers' understanding of patient-centered care and patient-provider communication.

#### *Medical Providers' Use of Stigmatizing Language to Describe PLWH-SU*

One finding that is particularly interesting is the difference in how medical providers described their PLWH-SU and how they described their clinical interactions with these PLWH-SU. While most providers used stigmatizing language when talking about PLWH-SU, these negative words were almost never accompanied by descriptions of stigmatizing or discriminating practices. For instance, although she used the words "huge mess" to describe her PLWH-SU, Tamera did not recall treating her PLWH-SU poorly. Instead, she spoke about using her own personal means to providing housing and/or food for these patients. The ways in which medical providers described their PLWH-SU is reflective of the widespread substance use stigma that is among healthcare professionals [30,31]. It is also a reflection of the larger societal perspective that paints people living with substance use as immoral and irresponsible [32,33]. While studies have shown that providers' moral judgment about their patients can influence treatment decisions [34], this is not

the case for the providers in this study. Referring back to my conceptual framework, this finding indicates that while medical providers may have been exposed to stigmatizing views beginning early in their non-professional lives, perhaps the re-socialization they experienced when they entered the medical profession led these medical providers to have a *treatment habitus* that allows them to counteract or override the cultural stigma that has long been placed on people living with substance use. One possible explanation for this counter action is the cultural shift towards viewing substance use as a chronic illness rather than a moral impairment [35], which has been augmented by the availability of medications for treating opioid and alcohol use disorders [30]. Another possible explanation is the pressure medical providers may feel to achieve a high patient satisfaction, a critical healthcare quality metric that is at times tied with reimbursement for services [36]. The potential financial repercussions to a healthcare organization of receiving poor patient satisfaction scores can incentivize providers to act in non-stigmatizing ways during clinical encounters even if they may personally harbor stigmatizing sentiments about PLWH-SU. Despite these reasons, providers' continued use of negative terms to describe their PLWH-SU during the interviews point to the tremendous power of words and how attitudes and perceptions are durable aspect of medical providers' *treatment habitus* that may not be changed without deliberate intervention.

### *Comparing Quantitative and Qualitative Results*

One of the main goals of the current study is to compare findings from the conversational interviews with the results from the analysis with the HIV provider survey. Using data from the HIV provider survey, I performed latent profile analyses and estimated four profiles of medical

providers, each with a different *treatment habitus* towards caring for PLWH-SU that is distinguished by their likelihood of deferring ART to PLWH-SU based on various patient-level factors and their beliefs about PLWH-SU's ART adherence. Review and synthesis of the interview transcripts revealed that there is a spectrum of *treatment habitus* among the medical providers that is distinguished by whether the medical providers are person-centered or provider-centered in their intentions, and whether the medical providers use informative or directive methods. Although ART deferral/interruption was one of the clinical practices that medical providers discussed during interviews, it does not differentiate the types of *treatment habitus*.

In the HIV providers survey analysis, I also conducted a distal outcome analysis where I found that the type of *treatment habitus* is not associated with two specific clinical practices: whether providers discussed substance use with PLWH frequently and whether providers gave information on substance use treatment to patients with substance use disorders. In the conversational interviews, I found that while *treatment habitus* is associated with how medical providers approach caring for their PLWH-SU, it is not necessarily associated with distinct clinical practices. For example, medical providers who have a person-centered *treatment habitus* took a multidisciplinary approach to caring for their PLWH-SU's HIV and substance use, but they may employ different strategies.

In the quantitative analysis, I found that non-Hispanic White medical providers were more likely to have a *treatment habitus* characterized by a greater possibility of deferring ART based on PLWH-SU's socio-demographics. This result, along with the discordance between medical providers' and PLWH's race/ethnicity in each of the study sites [37-42] prompted some



discussions about race and patient-provider racial concordance in the conversational interviews. Medical providers did not discuss how race/ethnicity have specifically affected ART decisions. However, they did speak about how racial concordance, and other forms of concordance, can influence more open communication with PLWH and PLWH-SU regardless of *treatment habitus*. This can contribute to medical providers better understanding PLWH's and PLWH-SU's social contexts for more shared-decision making on ART prescription.

Latent class regression using the HIV provider survey data found that the type of *treatment habitus* is associated with factors that pertain to medical providers' treatment chances (i.e., the types and quantities of resources that are available for caring for PLWH-SU within their professional world). Specifically, I found that providers who received substance use disorder training in recent years reported lower likelihoods of ART deferral for any reason. Medical providers spoke at-length during interviews about the resources they have at their disposal that have helped facilitate their ability and capacity to care for their PLWH and PLWH-SU, but they are different from those identified from the HIV provider survey. In the conversational interviews, the resources that medical providers' discussed most frequently were the availability of ancillary staff and having sufficient time.

This difference between the quantitative and qualitative findings can be attributable to the differences in how the two studies were designed. While the conversational interviews were designed with understanding medical providers' *treatment habitus* in mind, this was not the case with the HIV provider survey. Furthermore, the quantitative analysis estimated medical providers' *treatment habitus* based on questions about their attitudes, beliefs and perceptions

while the interviews inferred medical providers' *treatment habitus* based on their descriptions of their practices. A more closely conceptualized and designed study where the survey questions and the interview topics better complement each other may produce more similar results.

### *Limitations*

There are a few limitations to this chapter. First, the study included only 36 medical providers from three cities who were purposefully sampled from a larger group of 258 medical providers who had previously completed a survey on their perceptions and practices towards the care of PLWH and PLWH-SU. Although the sample size was modest, I was able to achieve thematic saturation. Moreover, the sample of medical providers was diverse in terms of socio-demographics, clinical experience, and work environments. This sample was also representative of the larger group of medical providers from which they were selected. And while my findings cannot be generalized, they can still be useful to future studies in other places or with other groups of medical providers. The second limitation to this study is that the findings may be subject to response bias. Providers who completed conversational interviews were those who were able to take, on average, 55 minutes out of their schedules. This means that I may have missed the perspectives of the providers who have the most intense workloads or see the greatest number of patients. To ensure that I was able to include as many providers as possible during the process, interview appointments were available early mornings, evenings, and on weekends. And on request, I separated interviews into two 30-minute sessions to accommodate providers' schedules. The last limitation to this study is that my findings are based solely on the recall of medical providers, without other evidence (e.g., recordings of clinical encounters, interviews

with PLWH-SU) to corroborate providers' responses. Given that a main objective of this study is to understand how medical providers understand and describe their own practices during clinical encounters with PLWH and PLWH-SU, the lack of other perspectives is acceptable. And to minimize the possibility of medical providers self-censoring their responses, I took special care to establish an open and non-judgmental environment, using neutral language, and allowing medical providers to speak on their own experiences organically.

## CONCLUSION

Grounded in the sociological theory of *habitus*, this study elicited medical providers' own perspectives on how they care for PLWH-SU. Providers revealed differences in *treatment habitus* that have significant impacts on patient-provider interactions and thereby the health outcomes of PLWH-SU. Furthermore, conversational interviews were able to provide further insight to complement and enrich quantitative findings from previous analyses, as well as gather new information to further refine the *treatment habitus* conceptual framework.

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## CHAPTER 5

### Conclusion

#### SUMMARY OF FINDINGS

The overall goal of this dissertation was to utilize sociologist Pierre Bourdieu's theory of *habitus* to better understand how medical providers' perceptions and dispositions towards caring for PLWH-SU are formed, and how these perceptions and dispositions are demonstrated in the ways medical providers take care of PLWH-SU. Despite significant medical advances in HIV treatment and care, people living with HIV and substance use (PLWH-SU) remain left behind because of disparities in HIV testing and infection status awareness [1], in engagement and retention in medical care [2,3], in access to antiretroviral therapy (ART) [4,5], and in rates of viral suppression [6,7]. As a result, PLWH-SU experience worse morbidity and mortality than people living with HIV without comorbid substance use. Negative and stigmatizing encounters between PLWH-SU and medical providers can be detrimental to PLWH-SU's health [8-12], and yet provider-based interventions to enhance clinical interactions remain an understudied area in both HIV and substance use research. Moreover, existing strategies have focused only on improving medical providers' knowledge and skills of patient management without addressing their underlying attitudes and perceptions about HIV or substance use [13-15].

To address the overall goal of this dissertation, I first conducted a systematic review on how the theory of *habitus* has been used to study medical providers' clinical practices and to evaluate



whether this theory can be a useful tool for my research question (Chapter 2). The review included 14 studies and showed that research about healthcare providers using *habitus* has been limited in settings, study populations, and methods. Most of the studies in the review were conducted in Europe or North America, in hospitals, with nurses, and all used qualitative methods. Existing studies have also been unclear on how researchers conceptualized *habitus* and how the theory was applied to the conduct the research. In studies that did describe how *habitus* was applied, most used it as an analytic tool to guide data analysis and interpretation. The review showed that despite a few shortcomings, *habitus* can be used to move beyond long-established ways of studying medical providers' practices when interacting with patients and offers a few advantages. First, *habitus* allows investigators to examine broader factors beyond the immediate patient-provider dyad. Second, *habitus* allows researchers to simultaneously consider medical providers' own agency as it interfaces with the structures they work within. Third, *habitus* takes into consideration time and how medical providers' past experiences may remain a part of how they care for patients in the present. Lastly, *habitus* allows researchers to explore when medical providers' dispositions can become transposable, offering opportunities for change.

Following the systematic review, I developed my conceptual framework of medical providers' *treatment habitus* and estimated a typology of *treatment habitus* using latent profile analyses with secondary survey data from 258 medical providers in Miami, Atlanta, and the District of Columbia (Chapter 3). My analyses found medical providers can be categorized as having four types of *treatment habitus* towards caring for PLWH-SU that differed in terms of reasons for deferring ART to PLWH-SU and beliefs about PLWH-SU's adherence to ART. My analyses also found that *treatment habitus* is associated with several provider-related characteristics,

including race and study site. Providers who identified as non-Hispanic White are more likely to have a *treatment habitus* that has a higher likelihood of deferring ART to PLWH-SU because of the patients' socio-demographics. This finding, and the racial misalignment between medical providers and PLWH in each study site [16-21], is a reflection of the long-standing racism in medicine [22,23] that has sustained health disparities. Providers who have a *treatment habitus* that has a higher likelihood of deferring ART to PLWH-SU because of the patients' socio-demographics was also more likely to be practicing in Miami. This finding may be a reflection of the city's lack of infrastructure and financial support, which has limited the resources available to medical providers to care for PLWH-SU [24,25]. *Treatment habitus* is not associated with whether medical providers discussed substance use with their PLWH frequently or provided substance use treatment information to patients who have substance use disorders.

To further explore the findings from the latent profile analyses, and to understand how medical providers perceive their own *treatment habitus*, I conducted conversational interviews with a purposive sample of 36 medical providers who had completed the HIV provider survey (Chapter 4). Medical providers were selected based on three primary criteria: study site, professional role, and latent profile (i.e., *treatment habitus*). These interviews showed that medical providers often talked about PLWH-SU in stigmatizing terms; however, this rarely translated into discriminating practices when providers cared for PLWH-SU. This potentially indicates that there is a part of these medical providers' *treatment habitus*, perhaps instilled during their re-socialization upon entering their profession, that allows them to counteract or override the widespread cultural stigma about people living with substance use. However, words carry tremendous power and how providers speak about, and possibly speak to, patients can have an impact on the quality of

their interactions [26]. The interviews also showed that while medical providers all described their roles in caring for PLWH and PLWH-SU using person-centered terms (e.g., guide, advisor, teacher), there is a subtle difference between those whose practices are truly person-centered and those whose practices are more provider-centered. Studies have shown that true patient-centered care, where medical providers care for patients holistically, has the ability to significantly improve patient health outcomes [27,28]. However, as the interviews revealed, medical providers do not always have the necessary training or resources to help address their patients' non-medical issues (e.g., lack of transportation, housing instability) [29]. This suggests that interventions to improve the care of PLWH-SU may wish to target changing medical providers' understanding of patient-centered care and bolstering providers' and healthcare organizations' ability to address PLWH-SU's medical and non-medical needs.

## **STRENGTHS and LIMITATIONS**

The analyses presented in this dissertation have several limitations. In the systematic review, I limited the scope to only include studies that assessed clinical practices that either directly or indirectly impacted patient care. This criterion excluded studies that assessed medical providers' practices in other professional responsibilities (e.g., teaching, staff management). But given that a specific aim for this dissertation is to assess the usability of *habitus* as a foundation to expand the current knowledge on medical providers' perceptions and practices when caring for PLWH-SU, this choice was appropriate. For the quantitative and qualitative analyses, the modest sample sizes and the geographic focus on three cities in the southern U.S. limit the generalizability of my findings. In addition, both analyses involved self-reported data that could have been subjected to

recall and social desirability biases. The geographical focus of the dissertation is a result of project funding, but it is important given that the southern U.S. is the epicenter of the domestic HIV epidemic [30], with Miami and Atlanta leading in the number of new HIV diagnoses [31]. To minimize social desirability bias, the HIV provider survey used neutral language and was self-administered by medical providers to ensure privacy. And during conversational interviews, I took care to establish an open and non-judgmental environment and to allow medical providers to speak on their own experiences organically by keeping discussion topics broad. The final limitation of this dissertation was in the lack of complementarity between my conceptual framework, the HIV provider survey, and the conversational interviews. This was partly a challenge of working with secondary data from a survey that was not specifically designed for my project. However, I had developed my conceptual framework prior to the survey launch and was given the opportunity to include additional questions to the survey according to my framework, thereby ensuring that I would have much of the pertinent data that I needed for the quantitative analysis. Moreover, by using a sequential explanatory design, I was able to use my findings from the quantitative analysis to inform the design of my conversational interviews. This allowed me to make sure that my qualitative analysis complemented my quantitative analysis, while remaining in consonance with my conceptual framework.

Notwithstanding these limitations, this dissertation had some important strengths. First, the entirety of this study, from conceptualization of the research question to study design and data collection to data analysis and interpretation, was all grounded in Bourdieu's theory of *habitus*. The use of social theory in public health has become more popular in recent years and has supported new ways of conceptualizing existing public health research questions. Basing

research on social theory offers researchers the ability to generalize findings and to build new intellectual frameworks that can inform future studies [32,33]. The second main strength of this dissertation is the quantification of *habitus*. From the systematic review, I learned that existing studies that have used *habitus* to examine medical providers' clinical practices have all used qualitative methods. The estimation of a typology of medical providers' *treatment habitus* using latent profile analysis and the identification of statistically significant predictors associated with medical providers' *treatment habitus* using latent class regression demonstrated that *habitus* can be quantified. This quantification may further support the use of social theories in health and medical research. On the other hand, the lack of a statistically significant association in my quantitative analysis between medical providers' *treatment habitus* and their clinical practices showed that there may still be much that we don't know about *habitus* that needs to be examined. The third strength of this dissertation is in its use of both quantitative and qualitative methods with the same group of medical providers. Results from the quantitative analyses provided me with guideposts on which additional topics to explore during conversational interviews with medical providers. For example, the identification of study site as a factor associated with *treatment habitus* from the latent class regressions, along with findings from past studies I had reviewed, indicated that I should ask medical providers to speak about the laws, policies and norms around HIV and substance use in the geographical areas where they practice. The rich context I gained about medical providers' *treatment habitus* and *treatment practices* during conversational interviews provided me with explanations, or the "whys," behind my quantitative results. This is most notable on the topic of medical providers' deferral/interruption of ART. While latent profile analyses demonstrated that medical providers' *treatment habitus* differ on

their likelihood of deferring ART, it did not provide an explanation why. And if it were not for the conversational interviews unveiling some of the reasons behind medical providers' decisions to defer or temporarily stop ART, it would have been possible to draw the conclusion from just the quantitative results that providers who reported the highest likelihood of ART deferral are the most stigmatizing when they care for PLWH-SU. The addition of conversational interviews allowed me to explore the aspects of my conceptual framework that I was not able to assess with the survey. Learning about medical providers' personal experiences with HIV and/or substance use and their motivations for pursuing the medical profession helped me to further understand the linkages between medical providers' non-professional and professional fields (i.e., the left and right sides of my conceptual framework). Altogether, this dissertation is the first of its kind and contributes new knowledge to an understudied area of HIV and substance use research that has the potential to inform the development of novel and effective provider-based interventions.

## **USABILITY OF *HABITUS* IN HEALTH RESEARCH**

One of the specific aims of this dissertation is to assess the usability of *habitus* as a theoretical foundation for research regarding medical provider practices. This task would have been difficult if I had to rely on Bourdieu's writing alone. By performing the systematic review in Chapter 2, I was able to examine how other health researchers understand the theory and come to have my own interpretation of *habitus* and how it may apply to my specific research question. The systematic review showed me the advantages of using *habitus* as well as the shortcomings that I should avoid when conducting the analyses presented in Chapters 3 and 4. The usability of *habitus* is further helped by Cockerham's Health Lifestyle Theory [34], which operationalizes

Bourdieu's theory in three practical ways: (1) condensing the multitude of factors that are incorporated into the development of an individual's *habitus* into four main categories, (2) clearly demonstrating the element of time by presenting *habitus* in a linear format, and (3) showing the durability of *habitus* by including the practices that are guided by *habitus*, as well as the reproduction of practices into lifestyles. Overall, through completing this dissertation, I would say that *habitus* is a useful tool for expanding upon current approaches to understanding medical providers' practices in order to develop more effective interventions. For instance, given the discussions on the availability of time during conversational interviews, a possible intervention can focus on re-structuring medical appointments. I would also say that, with some modifications, my conceptual framework of *treatment habitus* can be useful for studying medical providers' practices when caring for other patient populations and/or in other areas of HIV prevention and treatment. For example, my conceptual framework can be appropriate for a study that examines medical providers' *treatment habitus* and their practices around educating and prescribing long-acting injectable HIV treatment to their patients.

## **FUTURE DIRECTIONS**

There were several interesting insights raised over the course of this dissertation that are beyond my scope of study but should be explored in future research endeavors in order to continue refining the concept of *treatment habitus* and to further explore ways to improve medical care for PLWH-SU. The systematic review chapter focused on previous research relevant to medical providers' clinical practices because of its proximity to the topic of this dissertation. But beyond the studies reviewed, the theory of *habitus* has been used many times to study other health-

related and non-health-related practices. Future research should examine how *habitus* has been used in other disciplines in order to further inform health researchers that wish to utilize this theory. Conversational interviews with medical providers revealed a racial divide in substance use among PLWH-SU across the three cities. Providers mentioned that White PLWH-SU were more likely to use methamphetamines while PLWH-SU of color were more likely to use crack or powder cocaine. A similar divide has previously been reported among people who inject drugs in San Francisco [35]. Future studies should explore this phenomenon in terms of how this divide affects (or not) medical providers' approaches to providing HIV care. Two of the providers brought up the role of medical education as a space for re-socializing medical providers. Further understanding of the medical education system in the U.S. and of how the HIV and substance use curricula are being taught to medical students can be beneficial for the development of early interventions. Lastly, resources such as substance use treatment programs or mental health providers were discussed repeatedly by medical providers as facilitators in their caring for PLWH and PLWH-SU. However, resources are not always readily available or accessible. Future research can explore new opportunities to bolster healthcare organizations' ability to provide such resources to meet PLWH-SU's unmet needs.

## **FINAL REMARKS**

I would like to close this dissertation by reflecting on what this process taught me about my own *habitus*. Like the medical providers I studied, I also simultaneously inhabit two *habitus* - one pertaining to my academic life, and one pertaining to my non-academic life. And also like the providers I studied, my status as an Asian woman, my early socializations as an only child, and



my experiences growing up as an immigrant in the U.S. under the Model Minority Myth crossed into my academic *field* and influenced things such as the schools I have attended, the disciplines I have studied, and the mentors I have aligned myself with. Through my process of conceptualizing medical providers' *treatment habitus*, I have also come to conceptualize and identify the multi-level factors that have shaped what I am calling my *research habitus*. Becoming aware of my *research habitus* has helped me to be more reflexive and thoughtful during the conduct of my research, not only in how I interacted with study participants, but also in how I used my data. It is my plan to carry this reflexivity as I take my next steps in academia so that in time, I will crystallize my *research practices* into a *research style* that is characterized by intellectual curiosity, social justice, scientific rigor, collaboration, and authenticity.

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## APPENDIX A: Systematic Review Data Extraction Form

<b>Author (Year):</b>	
<b>Primary Outcome:</b> [“the clinical practice”]	
<b>Objective:</b>	
<b>Population:</b>	
<b>Setting:</b>	
<b>Methodology:</b>	
<b>Type(s) of Data:</b>	
<b>Analysis Plan:</b>	
<b>Major Findings:</b>	
<b>Habitus Definition:</b>	
<b>Habitus Usage:</b> [intended, actual]	
<b>Limitations:</b>	
<b>Contributions:</b>	

**Additional Notes:**

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## APPENDIX B: Conversational Interview Guide

Pre-Interview Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

This interview guide is not a structured questionnaire; it is meant to serve as a roadmap for conversation between the interviewer and the medical providers participating in this research study. This guide includes a list of overarching topics that have been identified as relevant to the specific aims of the research study. This list is not exhaustive as new topics related to the study objectives unanticipated by the researcher can be brought up by medical providers over the course of the interview. In order to fully explore any unanticipated topics that may be significant, the interviewer will follow participants' train of thoughts and encourage conversation relevant to the research study that participants consider important based on their views.

Texts under [numbers] are overarching topics for conversation with medical providers. Texts under [letters] are sample prompts for medical providers in case they ask for more context. Texts under [numerals] are sample probes for the interviewer to use to gain additional insights when necessary.

1. Work and role as a medical provider.
  - a. Decision to become a medical provider
  - b. Rewarding and challenging aspects of the profession and specific role(s).
  
2. Work environment.
  - a. Decision to work at current institution.
  - b. Relationship with colleagues.
  - c. Relationship with patients.
  - d. Institutional regulations/procedures that make their work easier or more challenging.
  - e. Institutional culture/collective mentality that make their work easier or more challenging.
  - f. Ways the institution can improve patient experience and/or patient care.

3. Geo-political environment.
  - a. Decision to work in current location (Atlanta, DC, or Miami).
  - b. Social or cultural beliefs that make care easier or more challenging.
  - c. Political climate that makes care easier or more challenging.
  - d. Structural policies that make care easier or more challenging.
    - i. [DC only] Effects of Medicaid expansion
4. Knowledge, perceptions, and experiences with HIV and providers' dispositions towards interacting with and caring for patients living with HIV who use substances.
  - a. Progress and current state of HIV epidemic.
  - b. Experiences, either personally or with friends/family, related to HIV.
    - i. Influence on decision to become a medical provider.
    - ii. Influence on decision to treat patients living with HIV.
    - iii. Influence on patient interactions.
5. Knowledge, perceptions, and experiences with substance use and providers' dispositions towards interacting with and caring for patients living with HIV who use substances.
  - a. Current state of opioid epidemic.
  - b. Issues related to substance use within the specific location (Atlanta, DC, or Miami).
  - c. Experiences, either personally or with friends/family, related to substance use.
    - i. Influence on decision to become a medical provider.
    - ii. Influence on patient interactions.
6. Intersection between substance use and HIV.
  - a. Impact of one on the other.
  - b. Interacting with patients living with HIV and use substances.
    - i. Specific concerns regarding patients' wellbeing.
    - ii. Specific challenges to providing care.
7. Experiences interacting with and caring for patients living with HIV who use substances.
  - a. Example of a "good" or "easy to work with" patient.
  - b. Example of a "challenging" or "hard to work with" patient.
  - c. Concerns about professional image as a provider who treats substance users.
  - d. Changes to ways of interacting with patients living with HIV who use substances over time and with increased experience.
8. Overall style for interacting with and caring for patients living with HIV who use substances.



9. COVID-19 and caring for patients living with HIV who use substances.
  - a. Use of telemedicine.
  - b. Perceptions on vulnerabilities of patients living with HIV who use substances.
  
10. Recommendations for interventions that can improve care for (and thereby health of) patients living with HIV who use substances.
  - a. Trainings to reduce HIV and substance use stigma.
  - b. Programs to improve patient-provider relationships and communication.
  - c. Conversations and trainings on racism within healthcare/medicine.
  
11. Additional relevant topics.
  
12. Address for gift cards (will be send out in 3-5 business days)