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Conducting Substance Use Research

POCKET GUIDES TO
SOCIAL WORK RESEARCH METHODS

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Preface

We knew at the outset that developing a single, unified resource for social work researchers about engaging in the science of substance use and addiction was an ambitious goal. We also wondered if covering the landscape in a single volume was feasible—a "breadth versus depth" debate ensued. We ultimately elected to lean more heavily on the side of "breadth" because of our intended audience: scholars who are moving into this area of study either as new researchers or as researchers experienced in other topical areas. For this reason, we aim to help social work researchers broaden their understanding of how the science of substance use and addiction transpires as they develop their own forms of inquiry in the area of substance use, substance use disorders, and substance-related problems. Therefore, as a scholar's substance-related research becomes more focused, specific issues and skill sets may need to be explored in greater depth. Toward this end, we have identified additional resources and tools that provide greater depth where needed.

Because of our keen interest in and commitment to what has variously been called "moving from theory to practice," "knowledge dissemination and utilization," "bridging the research–practice gap," and "from bench to bedside," we adopted a translational science context for the contents of this book (more about this in chapter 1). With constant awareness of this translational science context, we have organized the

book's chapters around key steps in the research process: (1) the background and rationale for developing a study, (2) study design decisions, (3) participant recruitment and retention practices, (4) measurement and analysis decisions, and (5) planning for dissemination, diffusion, and implementation.

We have placed considerable emphasis on what is unique about how social work researchers develop and implement their inquiries about substance use or addiction. This includes, but is not limited to, emphasizing evidence to inform practice, biopsychosocial approaches, life span perspectives, the importance of representative and culturally competent studies, and multilevel integration in social work intervention and inquiry. Each chapter addresses real-world contexts of substance use research and incorporates much of the meaning and experience that we have gained from engaging in substance use research ourselves, learned from the mistakes and accomplishments of peers and colleagues engaged in these endeavors, and received through shared glimpses into the lives of many study participants.

Finally, a note about what this book is not: It is not a review of substance use and addiction research findings, nor is it a book detailing best practices in substance use and addiction prevention or treatment. While we make reference to specific studies addressing these issues throughout the book, we do not pretend to present a systematic, critical analysis of the evidence available to inform practice; there are other, excellent resources available to meet that particular end (e.g., McNeese & DeNitto, 2012; Miller, 2009; Miller, Forcehimes, & Zweben, 2012; Straussner, 2013; van Wormer & Davis, 2013; Vaughn & Perron, 2013). Our aim, instead, is to help inform social investigators about the possibilities for best research practices in the substance use and addiction arena.

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Conducting Substance Use Research

1

Introduction to Conducting Substance Use Research

This book is about conducting social work research involving substance use and substance use disorders, along with substance-related concerns. This topic is particularly relevant to social work investigators because substance-related issues arise in almost every conceivable social work practice domain: Social work practitioners encounter alcohol, tobacco, and other drug-related problems in their work with individuals, couples, families, communities, social institutions, policies, and global systems, whether or not substance use is their primary practice emphasis (Amodeo, Fassler, & Griffin, 2002; Bina et al., 2008; Senreich & Straussner, 2013; Smith, Whitaker, & Weismiller, 2006; Sun, 2001). Social work practitioners and researchers encounter substance use and related issues in their work concerning mental and physical health, child and family welfare, interpersonal and community violence, homelessness, aging, ability and disability, adolescents and emerging adults, employee assistance, criminal justice, and human diversity, among others. According to data

collected in the United States' annual National Survey on Drug Use and Health during 2011,

- 8.7% of the population aged 12 years and above (an estimated 22.5 million persons) used an illicit drug during the month prior to responding to the survey—similar to rates in 2009 and 2010
- 2.4% of individuals aged 12 and above (about 6.1 million persons) engaged in the nonmedical use of prescription psychotherapeutic drugs, such as stimulant, sedative/tranquilizing, or pain relief medications
- 22.6% of persons aged 12 years and above (about 58.3 million individuals) participated in binge drinking at least once in the 30 days before responding to the survey
- 8.0% of persons aged 12 years and above (an estimated 20.6 million individuals) met diagnostic criteria for abuse or dependence on alcohol and/or other substances (Substance Abuse and Mental Health Services Administration, 2012b, using *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition, Text Revision, criteria)

Recent and pending changes in the behavioral health care system associated with passage of The Patient Protection and Affordable Care Act of 2010 pose both challenges and opportunities for transforming how treatment for substance use disorders is delivered. Systems of care involving public funding are likely to experience the greatest immediate impact, with mandated inclusion of substance abuse service as an essential benefit that states must offer (Buck, 2011). The number of individuals eligible for publicly funded substance use disorder–treatment services will likely expand greatly as the mandated changes are implemented in 2014 (Buck, 2011); substance use–related services for privately insured individuals may also become increasingly accessible, contributing to increased numbers needing services (Garfield, Lave, & Donohue, 2010). Furthermore, many programs and practitioners providing substance use disorder–treatment services are likely to encounter increased pressure to engage in practices supported by evidence of effectiveness, efficacy, and efficiency to meet mandated criteria and standards of care. In turn, this evolution leads to an enhanced need for social work research to inform, evaluate, and implement innovative interventions.

Alcohol and other drug issues are ubiquitous among the client systems that social work investigators study, regardless of the investigators' primary areas of inquiry. Substance misuse and substance use disorders are often the defining characteristic of the most intractable client problems, and co-occurring problems are commonly presented. The delivery systems for substance use disorder treatment are complex and facing a period of rapid evolutionary transformation. Support for social work investigators' efforts to study substance use–related topics best begins with an examination of the contexts within which such research is conducted and of several issues that investigators are likely to encounter.

SUBSTANCES OF CONCERN

The different types of substances that human beings can abuse are, unfortunately, ever growing and expanding. Known substances of abuse are frequently classified in terms of their mechanisms of effect on the human mind and body. Some of the common categorization schemes include the following:

- tobacco/nicotine (i.e., cigarettes, cigars, pipe tobacco, snuff, and chew)
- alcohol (ethyl), ethanol, or EtOH (e.g., beer, wine, spirits, and caffeinated alcohol mixes)
- cannabis/cannabinoids (i.e., marijuana and synthetically produced compounds)
- opiates/opioids (e.g., morphine, prescription pain medication, and opioid addiction medications such as methadone)
- (psycho)stimulants, amphetamines, and cocaine (e.g., methamphetamines, khat, "crack" cocaine, caffeine, "bath salts," and prescription drugs for attention deficit disorder and narcolepsy such as Adderall, Concerta®, Ritalin)
- hallucinogens and "psychotomimetics" (e.g., lysergic acid diethylamide [LSD], peyote, psilocybin, phencyclidine [PCP], large doses of dextromethorphan cough medicine, and salvia)
- club and synthetic drugs (e.g., gamma-hydroxybutyrate [GHB], ketamine, Rohypnol, 3,4-methylenedioxy-methamphetamine [MDMA] or "ecstasy," amyl/butyl nitrite, Spice, smart/eco drugs, synthetic cannabis/marijuana, and mephedrone)

- depressant and dissociative drugs (e.g., prescription drugs for preanesthesia, sleep, and anxiety/stress such as benzodiazepines, tranquilizers, and sedatives)
- steroids (i.e., anabolic and androgenic steroids)
- inhalants, such as household and industrial aerosol sprays, gasoline, butane (e.g., cigarette lighter refills), nitrous oxide and medical anesthetics (e.g., whipped cream dispensers, "whippets," gas cylinders), and refrigerant gases

Sometimes, listings of commonly abused substances separately categorize prescription medications such as central nervous system (CNS) depressants, stimulants, and pain relievers; sometimes they incorporate misused prescription drugs within the listed categories as defined by the drugs' specific actions. For more details regarding street names, mechanisms of administration, mechanisms of misuse, acute effects, and associated health risks of each type, see the National Institute on Drug Abuse Commonly Abused Drugs Chart at http://www.drugabuse.gov/drugpages/drugsofabuse.html, their InfoFacts series that provides detailed descriptions of many specific substances of abuse (http://www.drugabuse.gov/publications/term/160/DrugFacts), and textbooks such as Rassool (2011), McNeece and DiNitto (2012), and Miller, Forcehimes, and Zweben (2011). In addition, the National Institute on Alcohol Abuse and Alcoholism Web site provides resources specific to the misuse of alcohol.

As well as understanding the nature of specific substances of abuse, it is often important in substance use research to distinguish between various mechanisms by which substances are being administered. For example, tobacco may be administered by being smoked as cigarettes and cigars or in the form of smokeless tobacco; alcohol may be consumed as wine, beer, "hard" liquor, alcohol–caffeine mixes, or a "jello shot" (see Box 1.1). Substances of abuse may be smoked, ingested, injected, inhaled, absorbed through nasal and oral membranes, as well as across the skin (*transdermal* administration). Distinctions in the routes of administration may be relevant to

- patterns and etiology of misuse and addiction (e.g., intensity of the "high" from injecting or smoking cocaine versus snorting)
- acute and long-term health effects (e.g., acute and long-term brain damage associated with "huffing" solvents or aerosols;

Box 1.1 The Caffeinated Alcoholic Beverage Story
Beverages containing high levels of caffeine entered the United States' drinking scene in 1997 with the introduction of the "energy drink" Red Bull (Thombs et al., 2010). In large numbers, college-aged drinkers engaged in the practice of mixing energy drinks with alcohol: The increased stimulation effects of the caffeine and other additives allowed them to increase their "recreational" alcohol consumption since it took longer for them to experience the subjective alcohol-related effects that would encourage them to stop drinking. This, in turn, increased the potential for high-risk drinking and alcohol-related harm (Berger, Fendrich, Chen, Arria, & Cisler, 2010; O'Brien, McCoy, Rhodes, Wagoner, & Wolfson, 2008). Epidemiologic and etiologic studies quickly led to advocacy for campus- and state-level policy responses to the packaging, labeling, and distribution of beverages with premixed alcohol and "energy drink" components. The full story demonstrates the multiple levels involved: from individual consumption behavior to macro-level responses to these products, including the international influence from other nations like Australia.

immediate cardiac and blood pressure effects versus longer-term dental problems associated with heavy methamphetamine use)

- concomitant risks (e.g., infectious disease exposure from injection of drugs and from sexual contact associated with acquiring or using certain drugs)
- macrosystem factors, including policies, and disparities in treatment service or criminal justice system responses

WHAT SOCIAL WORK BRINGS TO THE ARENA

The National Institutes of Health (NIH) Plan for Social Work Research characterizes social work research as an important and underdeveloped component of inquiry that could positively impact the nation's health (http://obssr.od.nih.gov/pdf/SWR_Report.pdf). The report's authors indicate that social work research "often examines cross-cutting foci" and

> Historically, social work research has focused on studies of the individual, family, group, community, policy and/or organizational level, focusing across the lifespan on prevention, intervention, treatment, aftercare

> and rehabilitation of acute and chronic conditions, including the effects of policy on social work practice. (p. 5)

What makes a particular study, line of investigation, or body of knowledge specifically social work, however, remains unclear.

The term *social work research* may refer to the disciplinary identity of scholars conducting the work. The Action Network of Social Work Education and Research (ANSWER) additionally describes social work research in terms of (1) our target audiences, including consumers, practitioners, policy makers, educators, and the general public; (2) the societal issues examined, including substance use; (3) exploration of social, behavioral, and environmental connections and interrelationships among individuals, families, neighborhoods, and social institutions; (4) efforts to identify strategies and solutions, as well as informing best service delivery and public policy practice approaches, to enhance the well-being of individuals, families, and communities; and (5) the many types of settings in which our research is conducted (see http://www.socialworkers.org/advocacy/answer/).

Social work research also encompasses

- the study of social work practices and the investigation of concepts and/or theories that influence social work practices and services delivered by social workers
- factors affecting access to services and service coordination
- studies concerning the populations and social systems (at multiple levels) with whom and with which social workers interact
- research concerning preventive or treatment interventions that social workers may deliver
- factors related to the dissemination and utilization of "exemplary" social work practices
- methods for improving social work research (e.g., research designs, measures, analytic approaches)

Authors of the NIH program announcement for Research on Social Work Practice and Concepts in Health (see PA-06-081 at http://grants.nih.gov/grants/guide/pa-files/PA-06-081.html) recognized several important factors that characterize social work research. One important note

relates to the biopsychosocial underpinnings of our profession and how crucial this can be to forging new approaches to intervention, capturing the integration across and interactions between behavioral, psychological, social, social environmental, and physical factors as determinants of wellness and improved outcomes. The announcement's authors also recognized social work as a profession with significant expertise in working across systems of care, within interdisciplinary teams, and with diverse populations who may experience multiple or complex sets of problems. Promoting organizational, community, and social institutional responsiveness to social problems is a significant aspect of the social work profession.

Additional core tenets of the social work profession offer important and relevant contributions to substance use research. The first is that social work practitioners utilize the best evidence available to inform their professional practices (Gambrill, 2004). This includes evidence from multiple sources—client self-determined choices, practitioner wisdom based on practice experience, professional ethics, and research- or empirically based evidence (Gray, Plath, & Webb, 2009; van Wormer & Thyer, 2010). A critical aspect of the research- or empirically based evidence domain lies in the identification of best practices, as well as the conditions and circumstances under which these best practices are likely to work or to fail (Gambrill, 2004; van Wormer & Thyer, 2010). It becomes incumbent on the profession to contribute to both developing and critically analyzing the evidence base concerning best practices with diverse populations, under diverse conditions, within diverse contexts (Gambrill, 2004). This obligation applies also to the social work profession's role in developing functional integration across service delivery systems (Fogel & Roberts-DeGennaro, 2011).

A second key tenet is the life span perspective frequently adopted in social work. Substance use and substance use disorders affect the functioning of individuals at all phases of life: prior to conception and prenatally; during all phases of infant, child, and adolescent development; and during emergent, early, middle, and late adulthood periods. Furthermore, exposure during earlier phases of the life span can have long-term implications for later phases, in both direct and indirect pathways of influence, as we recognize from decades of research concerning the lifelong effects of fetal alcohol exposure (Warren, Hewitt, & Thomas, 2011) and more recent studies of how early life stress contributes to the vulnerability to

adolescent problem drinking and substance use disorders in early adulthood (e.g., Enoch, 2011).

The conduct of intervention research concerning substance use is greatly facilitated by certain philosophies, values, and perspectives around which the social work profession is centered. The 2008 Code of Ethics of the National Association of Social Workers lists six core values, the constellation of which reflects the profession's unique purpose and perspective (www.naswdc.org/pubs/code/code.asp, see Preamble). Included among these are social justice, dignity and worth of the person, and importance of human relationships. For example, evidence indicates the importance of certain common therapeutic elements that promote certain common therapeutic factors such as self-determination, self-directed goals, and therapeutic relationship dimensions in determining intervention outcomes (Barth et al., 2012).

An area where social work stands to make still greater contributions in substance use research is to move beyond separate studies of meso- and macrosystem factors toward conducting multilevel and multisystemic studies. This shift allows for a more holistic understanding of substance use, misuse, addiction, and related social or behavioral health problems. Additional dimensions are important for social work investigators to consider as they also have significance for the lives of individuals, families, communities, institutions, and global societies affected by substance use, addiction, production, distribution, related side effects, and treatment. One of these important dimensions relates to policy. The Alcohol Policy Information System sponsored by the National Institute on Alcohol Abuse and Alcoholism (see http://www.alcoholpolicy.niaaa.nih.gov/) summarizes state-by-state and federal policy in 35 policy areas. Social work scholars may need to know, for example, about differences in how health care services for alcohol-related illnesses and treatment of alcohol use disorders are financed in order to understand disparities between states and across population groups. Or researchers may need to know about differences in how taxation or retail sale controls might affect alcohol misuse and related epidemiological patterns. The way in which enacted policies are actually enforced in a community is also an important facet of the picture.

A second important dimension for researchers to consider involves possible disparities across subgroups and populations (e.g., age, gender, race/ethnicity, social class, and life circumstances). These disparities

relate to patterns of use, addiction, access, norms, and treatment related to a particular substance. For example, 20 states in the year 2010 had provisions pertaining to child abuse or neglect related to a woman's alcohol use during pregnancy (see http://www.alcoholpolicy.niaaa.nih.gov/Alcohol_and_Pregnancy_Legal_Significance_for_Child_Abuse_Child_Neglect.html). Knowing about this stance when conducting research concerning women's substance use may contribute to a better understanding of the impact of disparities in how women access treatment services for substance use disorders or prenatal health care.

Another example where social work researchers encounter significant disparities involves access to addiction treatment services experienced by individuals during incarceration in jail or prison and as incarcerated individuals reenter the community following release from custody. Despite the relatively high rate of substance use and substance use disorders among individuals in jails and prisons, they receive remarkably few evidence-informed services, even though these have demonstrated efficacy and effectiveness for improving quality of life and reducing recidivism (see LeBel, 2010; Re-Entry Policy Council, 2004). Furthermore, there exist marked discrepancies in terms of how jail and prison inmates' race and ethnicity compare to the nation's general population (Minton, 2011). Because of our social justice perspectives, social work researchers may lead the substance use research field to ask questions that are very different from those traditionally pursued.

ADOPTING A TRANSLATIONAL SCIENCE FRAMEWORK

An oft-repeated theme in substance use research involves the need to ensure that what we learn through science is translated into practice improvements. We have adopted a broad-spectrum framework of translational science as applied to substance use science, a framework adapted from several models presented in the scientific literature (e.g., Wandersman et al., 2008). First, the framework that we offer covers a wide range of knowledge-building activities designed to address questions that span the full translational science spectrum and then some. These activities are iterative in nature; they have mutual, back-and-forth influences on one another. All of a researcher's activities and decisions, from which research questions are asked through disseminating outcomes, are affected by "where the science is."