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Understanding the Etiology of Prescription Opioid Abuse: Implications for Prevention and Treatment

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Abstract

Although studies on the initiation of substance abuse abound, the body of literature on prescription opioid abuse (POA) etiology is small. Little is known about why and how the onset of POA occurs, especially among high-risk populations. In this study we aimed to fill this important knowledge gap by exploring the POA initiation experiences of 90 prescription opioid abusers currently in treatment and their narrative accounts of the circumstances surrounding their POA onset. This research was conducted within a storyline framework, which operates on the premise that the path to drug abuse represents a biography or a process rather than a static condition. Audiotapes of in-depth interviews were transcribed, coded, and thematically analyzed. Analyses revealed the presence of four trajectories leading to POA. This study adds to the limited research on POA etiology by not only illuminating the psychosocial factors that contribute to POA onset, but also by situating initiation experiences within broader life processes. The study findings provide crucial insights to policymakers and interventionists in identifying who is at risk for POA, and more important, when and how to intervene most efficaciously.

Keywords

addiction/substance use; illness and disease, prevention; interviews, semistructured; mental health and illness; psychosocial issues; social constructionism; sociology

Prescription opioid abuse (POA) continues to be a public health issue that causes increased morbidity and mortality on an international scale (Holmes, 2012). In 2011, for example, the European Monitoring Centre for Drugs and Drug Addiction (2011) released a report documenting striking increases in POA across Europe, but nowhere is the problem more prominent than in the United States, where POA has now reached unprecedented levels. The rise in incidence has been largely attributed to initiation among adolescents and young adults since the mid-1990s (Dowling, Storr, & Chilcoat, 2006). Opioids are widely used in a medical context for their analgesic properties, but can produce euphoric effects that make them prone to abuse. In 2010, the U.S. Department of Health and Human Services identified POA as the fastest-growing form of substance abuse nationwide (Hanson, 2010).

Although the abuse of prescription opioids is not a new problem, this trend has increased significantly in the United States over the past two decades. The incidence of prescription

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painkiller abuse increased by more than 400%, from 628,000 initiates in 1990 to 2.7 million in 2000 (Sigmon, 2006). This dramatic rise in POA is also seen in drug-related emergency department (ED) visits, with prescription opioid ED mentions increasing by 408% between 1994 and 2002 (Gilson, Ryan, Joranson, & Dahl, 2004). Not surprisingly, the number of individuals who seek treatment is also growing, as evidenced by a 350% increase in the number of yearly admissions to drug treatment programs for primary POA in the United States between 1992 and 2002 (Sigmon).

The proportion of persons admitted to substance abuse treatment reporting any POA has also experienced a considerable surge, increasing more than fourfold between 1998 and 2008, from 2.2% to 9.8% (Substance Abuse and Mental Health Services Administration [SAMHSA], 2010). Prior research has linked this rise in POA to an escalation in prescription opioid-related deaths. Nationally, the number of fatal poisonings involving opioid analgesics ballooned to 13,800 deaths in 2006 (Warner, Chen, & Makuc, 2009), with oxycodone, hydrocodone, and methadone among the medications most often implicated (Wysowski, 2007). These numbers show that POA is a matter of life and death for many users, and although the increase in POA is well documented, the problem continues to worsen as approximately two million people are expected to initiate POA annually (SAMHSA).

Problems associated with drug use might be considered from a clinical perspective, and thus focus on the formal diagnosis of drug abuse disorders, or from a medical-legal standpoint that emphasizes nonmedical or harmful use (Zacny et al., 2003). In this study, the latter approach was adopted. For the purposes of this research, the term *prescription opioid abuse* is defined as follows: (a) taking prescription opioids without a legitimate prescription, or (b) taking them in ways not prescribed by a physician (e.g., overusing, improper ingestion method). Although there is no universal standard for drug-use terminology, the term *abuse*, rather than *use*, was deemed appropriate. This decision was made in accordance with recommendations set forth by the American Psychiatric Association (2006), which endorsed using the term *abuse* when drug use becomes a significant and problematic feature of an individual's lifestyle.

A Storyline Approach

When drug users are asked why they started using a particular drug, they typically do not point to a singular reason, but rather they usually tell a story explaining why and how they began to use (Agnew, 2006). These stories describe the events and circumstances that led up to the initial use, and although participants might refer to the conditions under which initiation occurred, they often focus on the events and factors prior to that situation (Agnew). The key events and conditions that constitute the path to initial use are referred to here as "storylines." The majority of researchers rarely take into account storylines in their explanation of drug use (Rigg & Murphy, 2013), but according to Presser (2010), these storylines provide the very best information with respect to illustrating how people give meaning to their behaviors, particularly hidden behaviors such as drug use. Additionally, the storyline approach is advantageous because it has the potential to link background and contextual factors because of reliance on narratives rather than forcing preexisting analytic frameworks onto those who are studied (Kavanaugh, 2010).

There has been some research, often conducted from an "addiction career" (Klingemann, 1999) or "life-course" (Hser, Longshore, & Anglin, 2007) perspective, in which the researchers have taken into account events that occur during the life span. However, these studies were not purely focused on stories of initiation. Furthermore, storylines are different from the standard life course approach, in that emphasis is placed on how persons construct

their drug history. In typical life course research it is assumed that there are definite stages in people's lives that are normative or occur naturally (Elder, 1985). Within a storyline framework, however, individuals are understood to be capable of making choices and constructing their own life journeys, within systems of opportunities and constraints (Hutchison, 2005).

What exactly is a storyline? Agnew's (2006) widely cited definition provides a rather clear summary:

At the most general level, a storyline is a temporally limited, interrelated set of events and conditions that increases the likelihood that individuals will engage in a crime [drug use] Storylines begin with a particular event; that is, "something happens" to the individual. This event is usually out of the ordinary, representing a deviation from the typical or routine aspects of the individual's life. This event temporarily affects the characteristics of the individual, the individual's interactions with others, and/or the settings encountered by the individual in ways that increase the likelihood of crime [drug use] Storylines include those "objective" events and conditions that increase the likelihood of a crime. They also include the individual's perception of and reaction to these events and conditions. (p. 121)

This storyline framework is better able than standardized survey instruments to represent the rich, complex, interwoven issues that contribute to POA, and might also give a fuller understanding than a standard questionnaire regarding the pressures, influences, and lived experiences that are a day-to-day reality for many drug users (Orbuch, 1997). Although storylines have been considered in the criminological/deviance literature, this approach is almost nonexistent in public health and drug-use literature.

Social Constructionism

The theoretical orientation that guided this research could best be described as social constructionism. Recently, social constructionism has taken an increasingly prominent role in the social and behavioral sciences. Constructionists posit that reality is linked fundamentally to interpretive actions, and society is viewed as an aggregate of actors who intervene and organize everyday settings (Holstein & Gubrium, 2003). The key feature of a constructionist approach is uncompromising attention to the interactive social construction process.

Such a framework, however, drives a more guarded approach to etiology/causality, because constructionists do not presume that the social world consists of clear causal linkages. Accordingly, the constructionist researcher does not aim to make definitive statements about an objective reality, but instead sets out to reconstruct how a particular social phenomenon, such as drug abuse onset, has been enacted (Bogard, 2003). Because social life is interpretive, causes must be understood to be mediated by human action. Such an approach to etiology is in keeping with the recognition that constructionists view social life to be an emergent process rather than a stable and objective system (Bogard).

POA Initiation: What is Known Thus Far?

The drug category with the largest number of initiates (excluding marijuana) was the nonmedical use of pain relievers, with 2.2 million new users in 2009 (SAMHSA, 2010), constituting a threefold increase since 1990. Although this rise in incidence has been attributed largely to initiation among adolescents and young adults (Dowling et al., 2006), little is known about why these numbers continue to increase. Several studies have tracked drug-use patterns among youth and found that the onset of POA and other psychoactive medications tend to take place during young adulthood, particularly during their mid-20s

(Kandel, 1980; Raveis & Kandel, 1987). Using illicit drugs is also considered a risk factor for POA initiation (Wu, Ringwalt, Mannelli, & Patkar, 2008).

Dowling and colleagues (2006) found that reporting lifetime use of marijuana, cocaine, or heroin was significantly associated with initiation of POA, thereby indicating that illicit drug use tends to precede the abuse of pain medications. This finding is consistent with prior research (Daniulaityte, Falck, Wang, & Carlson, 2009), which also revealed illicit drug use to be a risk factor for POA. In addition, mental health problems might play a role in POA initiation, because one study found that adults with mental health problems (e.g., depression, panic attacks) were more than twice as likely to be recent-onset users as compared to those without such symptoms (Dowling et al.).

Additionally, there are a handful of articles that refer to this issue. For example, Daniulaityte, Carlson, and Kenne (2006) examined the different reasons given by adult drug users for initiating POA. The participants gave a number of different reasons, including self-medication of emotional and physical pain, social influences, easy access to prescription opioids, and recreation. Some reported that their first prescription opioid “high” occurred when they received treatment for legitimate medical problems, thereby suggesting that their issues with POA were developed iatrogenically. Additionally, Inciardi, Surratt, Cicero, and Beard (2009) found that POA often served as a “gateway” to heroin use, because the majority of participants reported making the transition to heroin after initiating POA. Kurtz, Inciardi, Surratt, and Cottler (2005) noted that participants in their study initiated POA after using street stimulants such as ecstasy, cocaine, and methamphetamine. POA was engaged in specifically to “take the edge off” or “come down” from these drugs.

These qualitative studies were important first steps toward a contextualized understanding of POA initiation, because they provide a starting point for future research. With the present study we build on these findings, and use them to supply “sensitizing concepts” as tentative starting points for coding. The research objective was to identify and describe the key events, circumstances, and conditions leading up to initial POA as interpreted by drug users in treatment.

Methods

The data in this study were drawn from the South Florida Health Survey (SFHS), a large quantitative-qualitative National Institute on Drug Abuse-funded, 4-year study that examined prescription drug abuse in south Florida among treatment and nontreatment populations. All study protocols, informed consent procedures, and instruments were reviewed and approved by the University of Delaware’s and Nova Southeastern University’s Institutional Review Boards. The SFHS project utilized a three-pronged approach to examine the issue of prescription drug abuse by collecting interview data from prescription drug abusers, drug dealers, and law enforcement officials. In the qualitative component of the study that targeted prescription drug abusers, a primary goal was to assess the onset and progression of prescription drug abuse. Data were collected from several prescription-drug-abusing populations, including both publicly subsidized and private-pay residential inpatient clients and methadone maintenance patients.

Users in treatment were selected as the focus of the current study because they constitute an important subgroup of drug users. In fact, research suggests that POA is an active and burgeoning phenomenon among methadone patients (Brands, Blake, Sproule, Gourlay, & Busto, 2004; Rosenblum et al., 2007) and residential treatment enrollees (SAMHSA, 2010). Moreover, individuals in treatment for drug abuse typically have more severe problems, including legal troubles, medical complications, and social/family challenges than their out-

of-treatment counterparts (Miller, Klamen, Hoffmann, & Flaherty, 1996). Also, additional data on treatment populations should have direct relevance for mental health practitioners, addiction specialists, and prevention initiatives.

Sample Recruitment

We used a nonprobability method of sampling known as purposive or judgmental sampling in this study. Although several strategies were adopted to locate study participants, referrals from methadone clinics and residential drug treatment centers served as the primary method of recruitment. Additionally, in partnership with local methadone clinics, research staff identified and recruited methadone patients by posting flyers and handing out study cards to individuals in and around the methadone clinics. Counselors at the methadone clinics also distributed study cards to clients, and each clinic provided space for interviews to be conducted. With regard to residential drug treatment clients, the treatment program staff identified those clients who reported any prescription drug abuse history and contacted the research team if the client was interested in participating in the study.

Eligibility Criteria

To be eligible for the study, individuals needed to be 18 years or older and report abusing prescription drugs at least five times within the previous 90 days. In addition, participants had to meet one of the following criteria to determine which drug-using group they represented: (a) methadone maintenance participants needed to be currently enrolled in a methadone maintenance treatment program (nonresidential); (b) residential drug treatment clients (public) had to be currently enrolled in a publicly funded inpatient drug treatment facility for less than 45 days prior to the interview date; and (c) residential drug treatment clients (private) had to be currently enrolled in a privately funded inpatient drug treatment facility for less than 45 days prior to the interview date.

Interview Procedures

All eligible SFHS participants completed a structured, computer-assisted personal interview (CAPI). However, participants who represented information-rich cases were selected purposefully for in-depth qualitative interviews. That is, those who reported extensive histories of prescription drug abuse were selected for diversity across the following parameters: gender, ethnicity, primary prescription drug abused, and method of acquisition. Ninety individual in-depth interviews were conducted between September 2008 and October 2010 with publicly subsidized residential in-treatment clients ($n = 30$), private-pay residential in-treatment clients ($n = 30$), and methadone maintenance patients ($n = 30$). The in-depth interviews were designed to capture rich, detailed information about patterns of initiation. The interviewer asked open-ended questions to provide participants an opportunity to tell their story in their own words. Interviews usually lasted between 60 and 90 minutes. Upon completion of an in-depth interview, each participant was paid \$30 in recognition of participation. Each interview was recorded using a digital voice recorder.

Analysis

All interviews were conducted and analyzed by the first author (Rigg). The digitally recorded interviews were transcribed verbatim by a professional transcriptionist and subsequently imported into NVivo 8 (Johnston, 2006), a qualitative data analysis computer software program. As in manual coding, the author employed the use of standard qualitative analytic devices such as memo writing and line-by-line coding; however, use of the software's search engine and query functions enhanced the ability to identify trends, examine initiation patterns, and search for salient storylines in the data.

Once transcription was complete, the first phase of analysis began. This process followed the six phases outlined by Braun and Clarke (2006). First, Rigg familiarized himself with the data by reading and rereading each transcript and noting initial ideas for coding. In the second phase, initial codes were generated. In this regard, interesting features of the data were coded in a systematic fashion across the entire data set, with the end product of collating data relevant to each code. Phase III began when all data were initially coded and collated. During this phase, the codes were sorted into potential themes/pathways, and all the text data relevant to each initial theme were gathered. Phase IV included the review and refinement of the devised set of initial themes by checking to determine if the data cohered together meaningfully within each theme. Phase V involved naming and defining themes. This phase is when specifics of each theme are refined, as well as the overall story told by the data, thereby generating clear definitions and names for each theme. In the sixth phase, the report was produced. At this juncture, the final opportunity existed for analysis, and compelling data examples were selected that illustrated each theme (Braun & Clarke).

Findings

Sample Demographics

The total sample ($N = 90$) included Black/African American ($n = 9$), White ($n = 70$), and Hispanic/Latino heterosexual participants ($n = 11$) who ranged in age from 18 to 51 years (mean = 31 years). A total of 52 men and 38 women comprised the final sample. A little over half of the sample (57%) possessed a high school diploma (or equivalent), and only a small number (9%) reported acquiring a college degree. An even smaller number were attending or had recently (within the past 3 years) attended college (8%). Regarding jobs/careers, most participants worked in a service industry (e.g., server, bartender, hotel employee), a health care field (e.g., nurse, X-ray technician, medical assistant), or a blue-collar profession (e.g., construction worker, painter, plumber).

One third (33%) of the participants had recently experienced housing instability, such as living in a shelter or, as some put it, “bouncing around” from place to place. The sample could best be characterized as having a low- to middle socioeconomic status, because many lacked a high school education, stable living conditions, and a consistent employment record. Almost two thirds of the participants (65%) also claimed to have histories with the criminal justice system, either as an adult or juvenile, primarily for drug-related incidents (e.g., possession, trafficking, and theft). Extensive drug histories were the norm, and almost all reported selling prescription pills at some point to support their drug habits. It is important to note that several biographical commonalities were present throughout the entire sample. Although these themes were part of each participant’s biographical pathway to POA, they were not unique to a specific storyline. In other words, these themes were represented across the sample, and they played a salient role in each POA pathway.

Substance-Abusing Family

A large majority of the participants (82%) had at least one parent or sibling who abused drugs or alcohol; parents were the family members most frequently mentioned. Drugs commonly used by family members included cocaine, prescription medications, marijuana, heroin, and alcohol. The participants told many stories of witnessing, as children, their parents preparing, selling, cooking, swallowing, smoking, injecting, and/or snorting a variety of drugs. One participant recalled, when he was 9 years old, seeing his father get drunk and snort cocaine:

My dad, he would come home, and I remember him bringing guys over, and I remember them putting a big mirror on the stove, and they would be snorting this white stuff everywhere. And then he’d always be drunk. He’d constantly be drunk.

He would even piss [urinate] in the pool or he'd piss everywhere, even in the house.

Participants almost always experienced parental drug use negatively, and described the situation in unfavorable terms. The following description was typical:

It was awful. My mother was an alcoholic plus a drug user. Prescription pills and street drugs. Father was an alcoholic. I had no one sober in my family to go to. All my mother's sisters were alcoholics and drug users. It made growing up pretty hard. A lot of arguing, fighting, hitting, and unhappiness.

Most important, parental drug use was also cited as being a key reason for initiating POA and drug use in general. Their parents' drug use, according to these users, made them curious about drugs or normalized drug use. One individual described how the sight of his mother appearing to have fun while using drugs fostered curiosity about drug use:

I saw her having a good time and I wanted to try having a good time like her. Some of the times, I didn't even know what they were doing. I just remember hearing her talk about them or seeing someone do it [drugs], and I said maybe I should try it.

Such drug use among parents seemed to serve as a behavioral exemplar for users. The parents' behavior created the impression that using drugs was an accepted way to have fun or deal with problems. In general, parental drug use encouraged the initiation of POA by increasing participants' inquisitiveness about drugs. Witnessing their parents' substance abuse cast drugs in a light that made such behavior appear benign, commonplace, and often enjoyable.

Escaping Hardships

Across the entire sample, participants reported going through adverse life events that caused them to experience longstanding and unpleasant emotional states (e.g., psychological distress, anxiety, emotional pain, depression). These experiences occurred typically during childhood/adolescence, and were described as "turning points" or "defining moments" in their lives, particularly with respect to their drug use. One participant shared her story of being the victim of sexual molestation:

When I was about seven years old I was sexually abused, sexually molested by a next-door neighbor that I believed was my uncle. I didn't know what was happening to me, but that's how I learned about sex because I was raped, I was sexually molested. I always blamed myself for that, so the rest of my childhood, I didn't feel worthy of anything. I was kind of below everyone.

The psychological scars left by these emotional wounds cut deeply, and most of these participants claimed to have problems coping with the resulting emotional consequences. Most turned to drugs in their attempts to do so, and many described their POA as an "escape":

I use for escape and relief for myself. I don't know why but I get very depressed. Escape is always a part of it for me. I have a lot of problems and issues out there. I'm always looking over my shoulder. I have people calling my mother's house saying they're going to cut my throat. I have a fiancée that's pregnant, who her health problems far exceed mine. So that's nerve wracking. I want to escape those feelings.

The psychological effects of these traumatic experiences were typically spoken about in the present tense, thereby suggesting the presence of ongoing mental health consequences. The theme of trying to escape from hardships and their emotional consequences was a strong biographical component of all the storylines given by participants. Additionally, no racial/

ethnic, age, or treatment group was associated with any particular trajectory; however, one gender-specific pathway did emerge. In the next sections we describe four observed pathways to POA initiation.

Initiation Storylines: The South Florida Effect

The first pathway to POA highlights the influence of the social environment on drug-abuse initiation. This trajectory involved the transition from being a “heroin junkie” to a “pill popper.” Not surprisingly, this storyline was observed most frequently among methadone maintenance patients (19/30), but was also witnessed across the larger sample (31/90). When asked about the circumstances surrounding their POA initiation, participants in this category typically began their respective storyline with something similar to the following: “Well, I didn’t know anything about pills until I came to live in south Florida! It all started when I moved here.” Although users told exciting, humorous, and sometimes tragic stories about their heroin addiction, their relocation to south Florida was mentioned as a pivotal point in their POA initiation process:

Well the pills actually did not enter the picture until a lot later. I have experience with heroin going back to like ‘93, ‘94. But actually I didn’t get into the pills until I moved into this area [south Florida]. I don’t know why, but I just never came into contact with ... oxycodone before. The whole pill thing began once I got here.

These participants universally complained about the inferiority of the heroin “scene” in south Florida compared to other cities around the country. The lower availability of heroin on the streets of south Florida was chief among their drug-related criticisms of the area:

I moved down here [south Florida] actually to a halfway house to get out of Detroit. Drugs are just way worse up there. Your harder drugs like weed [marijuana], coke [cocaine], and heroin, and stuff are up there, but down here that’s where you find more pills and stuff. Plus down here those harder drugs are not so easy to get; if you don’t know the right people you can’t find it. It’s not as easy as people think to go out and find heroin, and coke, and stuff anymore.

Another factor that was raised repeatedly by participants in this category was the poor quality of the heroin in south Florida. One user humorously stated, “The heroin down here has been stepped on so many times, you can see the dealer’s footprints in it!” After being confronted with the reality that heroin in south Florida was not very potent and was inconvenient to find, the decision was relatively simple to try pain pills as a heroin substitute:

Blues [Roxicodone] are so similar to heroin, it’s basically synthetic heroin, and I have been addicted to heroin from the time I was fourteen. I wanted that high again ‘cause I haven’t been able to find good heroin down here. Once I started doing the OxyContin, I didn’t touch heroin at all. Because it wasn’t as clean or as good of a high to me. I thought, “Well, these are a lot better. They last longer, and I’m not worried about what I’m putting into my body.” That’s how I would justify it in my own head.

This decision to try opioids was aided by the notion that painkillers are safer, purer, longer lasting, and stronger than heroin:

I had heard from people that the high [from pills] was better than the dope [heroin] here. It lasts way longer and its better for you, too. Think about it: pills are made in a lab, I think, and heroin is made basically in the streets. And they put God-knows-what in there, you know?

These participants admitted that an important reason for transitioning to POA was that they viewed this type of drug use as more respectable than using heroin. The idea of being able to shed the label of “heroin junkie” resonated with them. This perceived alleviation of stigma allowed them to feel better about themselves:

I started to do oxys because I felt low doing heroin. I had felt like a junkie. I wanted to be on the pills because honestly, deep down in my head it made me feel better to be on pills. Not physically or anything; mentally it made me feel better about myself that I was on pills and not on heroin.

Some persons on this trajectory initiated POA out of necessity. There were a few stories describing the initiation of abusing painkillers because they were unable to obtain any heroin and began experiencing withdrawal. In an effort to avoid these impending symptoms, some engaged in POA simply to avoid being “dope sick.” However, after substituting heroin for pills a few times, participants typically reported developing a preference for the pharmaceutical-grade opioids, claiming the high was “smoother” and lasted longer. Additionally, acquiring heroin could also be a dangerous endeavor in south Florida. Heroin dealers were located typically in dangerous inner-city areas where crime and violence were commonplace:

I hated having to go to Overtown to cop [buy heroin]. It’s a major hassle. Fucking cops are everywhere! Plus I am White. So they see a White boy walking around in Overtown and they know what’s up. They always stop me and say, “What are you doing down here?” I stuck out like a sore thumb, man. If I don’t get harassed by the police, I am getting jumped by people in the ‘hood [neighborhood].

Obtaining a prescription painkiller was by far a simpler undertaking. According to these participants, pain pills could be obtained easily, in large amounts, by visiting one (or several) of the many pain management clinics across south Florida (Rigg, Kurtz, & Surratt, 2012; Rigg, March, & Inciardi, 2010). Furthermore, pills could be acquired by buying them from a fellow drug user who visited pain clinics. The danger and difficulty associated with buying heroin, and the relative ease with which pain medications could be obtained in south Florida, played a clear role in facilitating a transition from heroin to POA.

Initiation Storylines: A Male Influence

The analysis revealed a gendered path to POA initiation. Women were introduced typically to painkillers via close interactions with a prescription-opioid-abusing man. More specifically, this introduction to POA took place within the context of a romantic heterosexual relationship (42% of women participants). These relationships were described as tumultuous and rife with dysfunction and drug use. Although these women were already drug involved, they consistently identified a particular relationship with a prescription-opioid-abusing man as the “true” beginning of their POA. This storyline frequently began with a woman, still an adolescent or young adult, dating a man who exposed her to a “new and exciting world of pills.” Specifically, the relationship contributed to the women’s POA in several ways, including introducing/expanding her network of prescription-opioid-abusing friends, adding increased psychological/emotional distress to their lives, portraying a positive example of POA, and providing additional access/availability to opioids.

Not surprisingly, these relationships were based largely on using and acquiring drugs, and surrounding themselves with drug-using friends. Stories of couples “partying” with other drug users abounded. However, these women reported seeing POA “up close” for the first time only after witnessing their boyfriends engaging in POA. The following is an example from a woman who claimed to have seen people engage in POA on multiple occasions, but

was only inspired to try such drugs after watching her significant other snort Roxicodone pills at a friend's house:

At first, I wondered, "Why is he always going into the bathroom all the time?" But once I found out, he stopped hiding it from me. He'd just do it [snort pills] in front of me. He and his friends were on them roxys all the time. He and his friends would be all fucked up and having fun. And it's being around the person you love: they do it, you want to do it, too.

Additionally, the relationship served to expand her friendship networks of prescription-opioid-abusing friends. One woman began spending more time with others who were experienced opioid abusers:

His stupid-ass friends would come over, even when [he] was at work. And they were into it big time. They were going to a shit ton [lot] of doctors back then. So they always had them [pills]. I didn't like them in the beginning, but I actually became friends with some of them. So, I started kicking it [spending time; hanging out] with them more. So, it was only a matter of time before I started popping them, too.

This sort of relationship was a major source of distress for all of the women in this biographical category. The women were consistent in telling stories of verbal/physical abuse, infidelity, financial problems, and run-ins with the police. This increased stress in their lives was also given as a significant reason for initiating POA, with many of them beginning to use these drugs as a means to cope with relationship problems:

I was hanging out with him [boyfriend] at the time. He's the one who introduced 'em to me. He's like, "Here, let's try these. They're good." So, I tried 'em. It was one night we were hanging out and I took one and I liked it. It just took away all my pain and took my mind off my boyfriend and all the problems with my kid's father, and that was the night that I started taking 'em. It made me feel better about my shitty relationship.

Initiation Storylines: The Cocaine Context

The third pathway to POA occurred in a street-based, cocaine-using context. This storyline consisted of a cocaine user who initiated POA in an attempt to moderate the effects of cocaine. These participants initiated POA for one of three reasons: (a) to help "come down" or avoid the "crash" associated with the end of a cocaine high, (b) to alter or modify the cocaine high during a binge, or (c) to calm down after taking too much cocaine. The participants in this category claimed that their drug of choice was cocaine (crack or powder). These drugs were taken frequently in "binges," with the cocaine being taken repeatedly for an extended period of time. A cocaine binge can last from as little as 1 day to as long as 3 or more days until the user finally "crashes." The cocaine high is characterized by feelings of euphoria, alertness, and invincibility, but once the effects wear off a more unpleasant state usually follows. Participants reported feeling depression, anxiety, paranoia, insomnia, body aches, fatigue, and other adverse symptoms during cocaine crashes:

You just feel shitty, real shitty. Because you want to sleep so bad, but can't. You're jittery and then your mind is racing like a million miles per hour. It's weird because you are really tired, but your body won't let you sleep cause of all the coke you just put up your nose. You're just sitting there staring at the walls and then you get sad and depressed that you just blew all your money on coke.

The crash was usually described as the worst part of the cocaine experience, and the avoidance of these feelings were big motivators for not wanting binges to end (Rigg & Ibañez, 2010). In fact, often individuals in this category reported having tried several

avoidance strategies, or “street remedies,” to counter these symptoms. Some of these remedies included taking dietary/vitamin supplements, drinking alcoholic beverages, smoking marijuana, or some combination of these options. At some point, usually after trying several avoidance tactics, the user was told about the virtues of prescription painkillers, not as a means to get high, but rather to soften the cocaine crash. The decision to begin POA in these cases seemed to serve a functional rather than a recreational purpose:

I was with this friend, and he had them [Percocet pills]. He said, “Try this man, and it won’t be as hard coming down.” I tried it and I just liked the feeling of it and kept getting them. Honestly, it wasn’t to get fucked up, it was to just mellow me out so I could sleep. So I guess you could say I actually started the percs to come down off coke so you don’t have that real jittery thing.

Others began abusing opioids in an attempt to alter the cocaine high during the binge, and not at the end; they were in search of a “speedball” effect. A typical speedball results from taking heroin and cocaine at the same time; however, this version involves prescription painkillers rather than street-grade heroin. The idea here is to combine the stimulant effects of the cocaine with the sedative properties of the painkillers to produce a more intense, different-quality “rush”:

I heard it [cocaine] was better with the oxy’s. So I tried to do an oxy and snort a line [of cocaine]. I’d mix it in together and it’s called “speedball.” It’s just like an upper and a downer together. The way it affects you is better, the pill and the cocaine, it’s just different than anything you’d ever do. It’s the best.

The third reason for initiating POA in a cocaine-using context was when participants realized that they might have taken too much cocaine. In these cases, POA was initiated out of a fear of being “too high,” or overdosing. Cocaine was usually ingested in a group setting with other users present. In this group context the participant expressed concern to peers about overdosing, and was offered a painkiller to offset the stimulant effects of the cocaine. In other words, the opioid was taken as a potential life-saving measure, and the decision to ingest the pill was usually made in a heightened state of emotion:

It started out at a friend’s house sophomore year, and I would take part in these parties with cocaine and I would end up doing a lot of cocaine and then feeling like I’m going to have a heart attack. My heart was just pounding out of my chest. It was scary. So this time I took some painkillers, ‘cause they are downers to calm myself down. Crushed and snorted it, and it did the trick.

Overall, the participants in this category were noticeably less knowledgeable about the world of POA, particularly with respect to acquisition and ingestion methods, and the types of prescription opioids. These individuals defined themselves through their cocaine use and many referred to themselves as “coke users” or “crack heads”; they made a point of mentioning that pills “aren’t really my thing.” Their POA appeared to make sense to them only within the framework of their cocaine use.

Initiation Storylines: Prescribed Addiction

The defining characteristic of the final pathway to POA involved participants having contact with the health care system. This storyline began with the individual requiring treatment that included a prescription painkiller. Some common examples of the problems that were experienced by these participants included bruises/fractures from car accidents, wisdom teeth removal, postoperative pain, and other chronic conditions such as arthritis. They typically initiated drug use several years prior to being prescribed pain medications; however, they concealed this information intentionally, even when asked about it directly by the physician or dentist. Most of the individuals in this category claimed they did not

initially view these medications as a means to get high, and some even admitted they were unaware of the psychoactive properties of pain medications:

I didn't know you could get high off pills, man. No one tells you that. You see, I am from the streets. Nobody is really using pills to get high. Where I am from you take pills when you get sick. So when I first started taking it, I was surprised that it made me feel so good. It was a pleasant surprise, though.

Even though these persons referred to themselves as “users” and “addicts,” the majority of them reported taking the medication initially as directed. During the course of treatment, typically over a 7- to 10-day period, they reported feeling a “buzz” from taking the prescribed amount of pills. This medication was successful in most cases in reducing their physical pain; however, there was an accompanying state of well-being and euphoria that users found appealing:

I took the pills like he [doctor] told me to at first. And everything was fine, but I fell in love with the buzz. It makes you feel like a million bucks. It really does. Don't get me wrong, it took away the pain in my jaw, but the best part was that it took away your other pains, too.

After experiencing a “high” from these medications, these participants claimed to want that feeling in abundance: “I wanted to feel like that all the time.” This desire led to a phenomenon that is referred to as “doubling up,” in which users begin taking twice the recommended dose:

I took one and it was awesome. After a while I took two and it was even better, and the high is instant after that. For the first couple of days, you only need one at a time and, you take it maybe three, four times a day one at a time. Then I started doubling up taking two and three at a time.

Individuals on this pathway were typically prescribed enough pills to last approximately a month. However, once they began doubling up, their supply would prematurely run out, thereby forcing them to return to the doctor before their scheduled appointment. To get the physician to write another prescription for opioids, the patient could employ a variety of strategies. Some concocted stories that their pills were lost or stolen, whereas others would claim that the medication was inadequate to reduce their pain. In the latter cases, patients asked for stronger, more potent pain medications. If the doctor refused, the patient simply visited another doctor (usually a pain-management physician) in an attempt to receive another prescription for opioids:

When you first start taking 'em, you can take a couple pills and you feel nice. And then your body starts increasing its tolerance and you have to take more. And then, “Oh no! I'm two weeks into it and I don't have my prescription anymore, so let's go to a different doctor.” Before you know it, I'm going to so many doctors I can't keep track.

Based on the interviews, these participants felt they were engaging in something “less illegal” than illicit drug use. They justified their POA because their pills were prescribed by a doctor for a legitimate medical reason. The fact that the medication elevated their mood and mental state was viewed as a “harmless bonus”:

I sort of knew it was wrong, but at the same time I didn't think it was such a bad thing. My head was telling me, “Dude, the doctor prescribed this to you. How bad can it be?” I thought me catching a little buzz was harmless.

Discussion

Although some of these findings support previous research, others alter the manner in which POA etiology should be viewed. Accordingly, in light of these new findings, some of the methods that are typically used to prevent and treat POA might need to be reconsidered. Prior to this study, the mainstream view of how individuals come to initiate POA was largely speculative and filled with large knowledge gaps. The data presented here, however, take a significant step toward providing some clarity to this complex issue.

The South Florida Effect

This particular trajectory is contrary to some prior research that uncovered evidence of POA as a gateway to heroin use (Grau et al., 2007; Inciardi et al., 2009; Pollini et al., 2011), and not vice-versa. The data presented here, however, are consistent with the findings of Lankenau et al. (2012), and suggest that the gateway-to-heroin hypothesis should be reconceptualized as being bidirectional. Outlined in this storyline is how heroin use can serve as a risk factor for POA, particularly for heroin users who reside in regions where POA is commonplace.

This pathway also brings to light a dangerous misnomer held by many drug users: that is, POA is a safe and somewhat legal behavior. Although other studies have uncovered similar results (Kurtz et al., 2005), the data presented here illustrate exactly how these notions influence heroin users' decision to begin POA. This finding highlights the need to educate users on the dangers and legal consequences of POA, because many users are unaware that prescription opioids and heroin act on the body and brain in virtually identical ways (Comer, Sullivan, Whittington, Vosburg, & Kowalczyk, 2008). However, given that pharmaceutical-grade opiates are of a known dosage and quality, and heroin is of an unknown purity and often possesses contaminants, future studies might explore the idea of prescription opioid use as a potential harm-reduction strategy for heroin users.

A Male Influence

This pathway is consistent with the results of prior research that female drug-abuse onset often takes place within the context of a romantic relationship (Bryant, Brener, Hull, & Treloar, 2010; Jackson, Parker, Dykeman, Gahagan, & Karabanow, 2010). This finding suggests that women tend to initiate POA in much the same way as they do illicit drugs. Findings from the current study not only highlight the impact that a relationship can have on POA onset for women, but provide a woman-centered perspective on how this process plays out, and describe the aspects of the relationship that contribute most to women beginning POA. Regarding POA prevention strategies, a one-size-fits-all approach would likely be ineffective, because the findings of this study indicate that the onset patterns of men and women can be quite dissimilar. In addition, treatment practitioners would be well served to examine carefully the past and current relationships of women addicted to painkillers, because the answers to these questions might be critical to rehabilitation.

The Cocaine Context

This storyline suggests that cocaine users might be at increased risk for initiating POA. Prior studies have uncovered statistical associations between POA and cocaine use (Dowling et al., 2006; McCabe, Boyd, & Teter, 2005). These findings are congruent with the results of this study. Furthermore, the data in this study help explain how and why these two forms of drug use are related, and more specifically how cocaine use can lead to POA. Prevention initiatives aimed at reducing POA should target cocaine users. Such initiatives should describe the dangerous and potentially lethal consequences of ingesting prescription opioids and cocaine together. Moreover, the prevention messages should provide cocaine users with

safe alternatives to alleviating crash symptoms and preventing overdose, such as over-the-counter remedies.

The participants who took this pathway to POA tended to define themselves by their cocaine use and initiated POA primarily for cocaine-related motives. This finding has implications for POA treatment programs, because cocaine use is related closely to POA onset and progression. Professionals in this field should note the nature of the relationship between cocaine and POA, and determine if their clients' POA began in this way. Furthermore, given that the salience of cocaine use in their lives trumped that of POA, a strong emphasis on their clients' cocaine use might yield efficacious results. Suggested by this finding is that successful treatment of cocaine addiction could go a long way in removing the impetus to engage in POA among cocaine-using prescription opioid abusers. Therefore, in terms of this storyline, focusing on POA will not be effective.

Prescribed Addiction

Revealed by this pathway is how drug users who receive opioid therapy for legitimate pain management can develop problems with POA. Although previous studies have shown a connection between being a prior drug user and developing POA problems within a pain-management context (Manchikanti, Fellows, Damron, Pampati, & McManus, 2005; Rhodin, Grönbladh, Nilsson, & Gordh, 2006), a fuller understanding of how POA transpires is provided by these data. This storyline revealed a pathway to POA that physicians and other health care professionals can use to more closely track the development of POA among pain-management patients. The findings suggest that pain patients who experience social marginalization, distressful life events, and mental health problems are particularly prone to POA onset. In this particular storyline, details are provided with respect to how some users can develop a reliance on prescription opioids to cope with such problems. Physicians might consider evaluating whether some of these issues are present in the lives of their patients.

Prior to prescribing opioids, health care providers should also consider alerting their patients to the possibility of this pathway developing. This intervention would heighten awareness among patients and help them to become more sensitive to the events playing out in their lives. Some of the participants in this category viewed doubling up on their pain medications as harmless. By speaking directly to patients about this potential storyline unfolding during the course of their opioid therapy, the patients would be better able to detect their own POA onset. In the same vein, discussing this storyline with the immediate family members of these high-risk pain patients (after patient consent) would also allow them to play an active role in the detection and prevention of POA among their loved ones.

In light of this storyline, an additional component to opioid therapy might also be considered. Given that individuals might be apprehensive about revealing their drug-use histories to a physician, perhaps a counselor or trained individual should be assigned to high-risk patients in pain management. In other words, patients who are suspected of using drugs would be more likely to reveal this information to a nonthreatening counselor or trained "peer," who could then provide them with tailored advice about where to seek appropriate help. Patients should also be warned about the potential health hazards of doubling up on their pain medications, because this practice was viewed as benign by many of the participants in this category.

Study Limitations

The findings should be interpreted within the context of the study limitations. As with all self-report data, the possibility of recall bias should be considered. Given that face-to-face interviewing was utilized as a means of data collection, interviewer effects and social

desirability bias are a possibility. However, these effects are believed to have been mitigated through the use of a trained, experienced interviewer. Because this was a nonprobability sample, any generalizations should be made with prudence, because the validity of the parameter estimates are unknown. However, since the goals of this research did not include statistical generalization, but rather a deeper understanding of POA etiology, the use of a purposefully selected sample was appropriate. Additionally, our focus on treatment populations might have served to narrow the applicability of results to non-treatment groups.

Suggestions for Future Research

This study begins to fill an important void. However, more POA studies are needed to determine the prevalence of each storyline in the general population. We recommend replicating this study among other drug-using populations in which POA is active. In general, the point would be to know the extent to which these pathways to POA hold true for nontreatment populations. For example, the trajectories to POA traveled by gay men, military veterans, or the elderly might be quite different from those identified here.

There might also be regional differences among POA initiation patterns. Although the reader can reasonably assume that these findings should bear resemblance to other urban areas in the United States, POA is also prevalent in many rural and suburban parts of the country. Additional data on the POA storylines in such areas would be useful in tailoring prevention and treatment programs to the specific needs of drug users who live in various parts of the country. Although prescription opioids are the most commonly abused class of medication, other prescription drug types, such as sedatives and stimulants, also have abuse potential. Future research should focus on determining if storylines differ by prescription drug. As previously mentioned, the use of storylines in the prevention and treatment of drug abuse is underutilized, and therefore subsequent research should aim to identify an appropriate role for storylines in these areas. These research recommendations are logical next steps in the area of POA etiology that should build directly on the findings of this study.

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