



Examining the Relationship between Social Context and Prescription Opioid Initiation Routes among Young Adults Entering Medical Detoxification

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Abstract

This paper examines the social context surrounding prescription opioid (PO) initiation and its relationship to route of administration among twenty young adults entering medical detoxification for opioid dependence. PO use was initiated either orally (n=10) or via alternate routes (n=10); the majority of the participants initiated in a social setting (n=15). Four categories of PO initiation emerged: with peers at school/social events; with fellow employees at work; with family; or alone. All initiating with alternative routes did so within a social context (n=10). Results suggest that the social context of initiation influences the use of alternate routes of administration.

Keywords: Young adult; Prescription opioids; Initiation; Social context; Routes of administration

Introduction

Within the last decade, treatment admissions for prescription opioid (PO) dependence have continued to rise. According to the latest findings from the National Survey on Drug Use and Health, annual treatment admissions for PO related problems rose from 360,000 in 2002 to 746,000 in 2013 [1]. Moreover, POs were involved in forty-seven percent of treatment admissions among those aged 20 to 29 [2]. POs have also been cited as involved in 67.8% of all reported U.S. emergency department overdoses [3]; for young adults, narcotic pain relievers were the second most common drug involved in drug related emergency department visits. Other emerging data based on drug injecting, young adult samples also suggest that POs are often the precursor to heroin abuse, thereby contributing to high risk behaviors including transition to injection [4-10].

Alternative routes of administration including snorting, smoking, and injecting are used for the purpose of achieving a more rapid release of a drug, thereby creating higher rewarding effects in the brain via a more potent high [11,12]. Use of alternate routes has important implications related to drug effect, health consequences, and risk of dependence [12,13]; specifically, use of alternate routes have been found to increase: the progression to drug dependence and addiction, due to a more potent and rapid delivery of the drug effects [13,14]; risk for infection such as HIV and hepatitis C; and, risk for fatal and non-fatal overdose [11,13]. Younger substance abusers are more likely to utilize non-oral routes (i.e. snorting, smoking), with many subsequently transitioning to high risk behaviors including injection [12,15]. Further, much of the research on alternate routes of administration has focused the use of POs prior to initiation of heroin use/ and or injection drug use [5,8,10].

Studies of prescription drug misuse among young adults have documented initiation as part of a social process in which peers

facilitate exposure and access [5,16]; moreover, friends often shape perceptions and expectations related to the misuse of prescription drugs [16]. Setting (i.e. school, parties) has also been found to influence the decision to initiate; setting, coupled with peer use and exposure, helps to normalize prescription drug abuse, creating comfort in the perception that use is common and fun [16]. Social and environmental contexts have also been found to contribute to transitions to alternative routes of administration, including drug injecting among established illicit PO users [5,10,17,18].

Some studies of young adults have indicated that peers are sources of exposure and have a key influence in the initiation process of prescription medication misuse [16]. Motivations for illicit prescription drug use among young adults [16] and high school student PO misusers [19] have been examined, as well as the onset of PO abuse among drug treatment clients [20] and other populations of substance abusers [21]. Other literature has also documented PO opioid initiation sources among youth and young adult populations of injection drug users [5] however, few studies have explored how social context may influence initiation to PO misuse via alternate routes.

The purpose of this paper is to explicate the social context surrounding PO initiation and how it may be related to the route of administration at initiation (or at first use) among young adult PO misusers entering residential medical detoxification in South Florida.

Methods

Target population, study eligibility and recruitment

Data were gathered on 20 young adults (ages 18-29) entering residential detox treatment for opioid dependence in South Florida. Eligible participants were between the ages of 18-29 and reported PO misuse one or more times in the last 90 days. PO misuse was defined as either taking opioids without a legitimate prescription, or taking one's

own prescribed medication in a way other than as prescribed by a doctor (e.g., taking more than prescribed).

The residential program, providing medical detoxification to over 1,000 individuals annually, accepts clients based on insurance coverage or ability to self-pay. The average length of stay is 5-7 days; following the program, individuals are discharged to a residential drug treatment facility for a 30 or 90 day treatment stay. In collaboration with the treatment program director, research staff explained the nature of the project to potential participants during scheduled groups. Those interested in the study were asked to approach trained research staff individually to indicate their interest in participating. All respondents were then screened for eligibility individually by research staff prior to participation.

Study procedures

Once deemed eligible and informed consent was obtained, one-on-one in-depth interviews were conducted in private offices. Data was collected via digital audio recording, and interviews typically lasted anywhere from 1 hour to 90 minutes. Participants received a \$30 monetary stipend for their time. Study protocols and instruments were approved by the Institutional Review Board at Nova Southeastern University.

In-depth interviews were designed to gather qualitative data regarding PO misuse, specifically the factors contributing to PO initiation, misuse, patterns, characteristics associated with alternate routes of PO administration (e.g. how they learned to use non-oral routes and how transitions between different routes occurred), risky needle practices, high risk sexual behaviors, and associated health and social risks. The interview guide included questions such as: “how did you start misusing POs?” (when they started, who they were using with, motivations for initiation); “what was the initial and most recent use context?”; “what were/are the community or peer norms related to use?” (availability, social relationships and how they influenced use); “what brought you into treatment?”; “what role did POs play?” (including routes of administration, specific problems that may have been related to use, prior substance abuse treatment, and current motivations for use); and information about drug trajectories (patterns and escalation in use, transition from PO use to heroin or transition from one route of administration to another); and sexual or other health risk behaviors (i.e. needle sharing, sex while high, sex with multiple partners).

Analysis

All in-depth interviews were transcribed verbatim from the digital audio recordings for analysis. Transcripts were imported into the software program Atlas. *ti* to facilitate coding and analysis. The primary author (Levi-Minzi) conducted multiple readings and coding of all in-depth interview transcripts to identify salient themes; a grounded theory approach utilizing open coding was selected for data analysis because it allows for participant explanations to inform or explain a particular phenomenon or social process [22]. An initial code list was created through word by word reading of the transcripts to identify the following participant characteristics: route and age of PO initiation, transitions to alternate routes of administration or heroin use, drug treatment history, and prior and current motivations for entering treatment. After this initial coding was conducted, senior scientific and other research staff assisted in the development of more focused coding to identify the most frequently occurring themes. A

second independent research staff member also conducted coding of a randomly selected subset of the interviews to ensure validity.

Results

Characteristics of study participants

Demographic characteristics of study participants are displayed in Table 1.

	N
Mean age of sample (SD): 23.15 (3.22) Range: 19-29	
Gender	
Male	12
Female	8
Race	
White	19
African American	1
Educational level	
Some high school	2
High school diploma/GED	5
Some college and higher	8
Post high school trade school	5
Prescription opioid misuse	
Mean age first Rx misuse (SD): 17.70 (2.79) Range:13-25	
Rx opioid initiation route	
Oral	10
Snort or smoke	10
Rx opioid initiation context¹	
Alone	4
With peers/family/others	15
Initiated Rx opioids for therapeutic use	4
Ever inject	16
Ever shared needles	8
Current primary opioid	
Rx opioids	8
Heroin	12
Drug treatment history	16

Table 1: Characteristics of young adult PO misusers entering residential detoxification in South Florida (N=20).

¹Missing data for one participant.

The sample encompassed 12 men and 8 women, with the majority (n=19) being non-Hispanic Caucasian. Most of the participants achieved a high school education or above (n=18). PO use was initiated either orally (n=10) or via snorting/smoking (n=10); none of the participants initiated via injection, although the majority of participants had transitioned to injecting by the time they were interviewed (n=16). Over half of the sample (12 participants) had transitioned to heroin and endorsed it as their current opioid of choice. Most described making this transition as a result of increasing PO tolerance which meant increased cost; heroin was more cost effective, more readily available, and was of higher potency. In terms of drug treatment histories, 16 respondents reported previous entry into drug treatment, with several indicating multiple in-patient stays for opioid dependence prior to this most recent entry into medical detox. Of the twenty participants, 11 had been using POs for 5 years or more and 9 had been using for less than 5 years.

Social context associated with initiation into PO misuse

The majority of the participants initiated PO misuse in a social setting (n=15, specifically, six women and nine men). Roxycodone (oxycodone) was the most commonly used drug upon initiation (n=12), followed by Percocet (acetaminophen and oxycodone; n=5), OxyContin (oxycodone; n=2), and Vicodin (hydrocodone and acetaminophen; n=1). Initiation via alternative routes almost always took place in the presence of others (n=9; one participant endorsing an alternative route did not report whether others were present during her initiation), and all those utilizing alternative routes initiated with oxycodone (Roxycodone or OxyContin, products which do not contain acetaminophen). Most respondents explained how they were shown alternate routes of administration by their peers. A 26-year-old male started misusing POs at age 15:

Caused my friend did it. He sucked the coating off. My friends know how to do it. Like, you don't just learn. . . . it's like a chain, like, someone taught me how. . . so I told them how...and they'll tell four kids how...

Independent of the route of administration, the social context of initiation seemed to fall into 4 major categories: with peers in social or school settings, with fellow employees at work, with family, or alone.

Peers in social or school settings: Those who initiated with a peer in school/social settings (n=11) endorsed both oral and non-oral routes of administration.

Oral: One 22-year-old male described initiation at age 16: He came up to me with...like, a tin full of Altoids and he's like, "Do you want a mint?" I was like, "Nah, I don't want no fucking mint." And he's like, "No, you want a mint." And I just looked at them and he's like, "Choose wisely." And like, I look at them and there's-like, Perc fives. And I was like, "Oh okay." So I took those and I remember feeling full. I remember the next class I was in, I was just like, dripping sweat, I felt like nauseous as hell.... And I remember throwing up in the hallway in a trashcan. . . . After I threw up, I felt really good. Like, it was like, a release of all that negative energy and I was just like, completely calm. . . .

Snorting: Many participants endorsed starting with snorting through learning from a friend. A 26-year-old male who initiated at age 20 explained:

I was just smoking alot of pot, going over to my friends' houses and they were all doing pills in front of me for months and months, and I never did them. . . . Yea (OxyContin) 80...they had them all. 20, 40, 60

and 80s I could get whatever. But they're snorting in front of me and I kept asking them how much does one of these cost because I see them do a pill at once.... And they're like 50 bucks and I'm like holy cow, like that's an 8th of weed, I can make a 8th of weed last me like, 4 days. So that's one of the reasons why I never tried it, I could never grasp the financial side of it....So finally one day we're over there, I think I had a bunch of extra money on me and I was like fuck it, let me try one of those pills. Not knowing what to expect, not what the high was or anything like that, they're all doing it and they love it...so I gave one of my dudes fifty bucks and he gave me a pill. I shaved it down, and I snorted half of it and umm, and felt like, "Oh I arrived," like, this is the best feeling in the world. . . . I just felt perfect, like everything in the world was right, everything my life was right, didn't have a care in the world.

Smoking: One 19-year-old male described initiation via smoking at age 13; he explained that he often hung out with older kids and really wanted to fit in, so he bought their drug of choice (Roxycodone) for them:

Thirteen years old is where I first experimented with Roxis....it really got popular in Boca around that time, and everybody was doing them. . . . Before we parked, he was like, "Do you want to try something really, really fun that'll get you really high? You'll feel so great that you'll feel like you're on a cloud." And I thought that was cool... And I wanted to be cool - so I said, "Yeah." So I bought them... I wanted to be accepted in that crowd, because they were older and they were cool. . . . And I saw some kid smoke it on foil in front of me, and obviously I gave him the money to buy the pills, so I did it with him. I was like, "What are these?" He's like, "They're blues." "I don't know what that is." I was 13.... But after that day when I took my first hit, it became - it became something else, because then I branched out and started getting them on my own. I didn't need these kids no more.

Fellow employees at work: Three participants described learning about POs and trying them for the first time while at work.

Oral: One 25-year-old woman described being introduced to POs by someone she worked with. The first time she tried it she was 19 and took it by mouth:

I was working at a restaurant and someone asked me if I wanted to split one....and he said it was \$25 for a little pill and I'm like, "\$25 holy.....!" So I'm like, "No, I'll split one with you." So I split one and then.... just made work the best place in the world to be.

Snorting: A 22-year-old female who worked in the food service industry described being introduced to snorting POs by a co-worker when she was 18:

I was a host at this restaurant, there was this cook that worked there that I'd like talk to all the time and then he brought it up to me and I tried it out in the parking lot with him.... we got on the topic of like parties and like things that we've done, and you just start asking like, "What do you drink or smoke?" like, "what do you do?"...I started talking to him about how I drank a lot in high school and that I smoked weed. Then he was like, "Well have you ever tried?" and I was like no, I actually never tried it, and then as he was describing to me what it did for him, how it made you feel, how it helped make your work day and all that better... Then I tried it, and I like, fell in love with it.... I snorted it, the very first time I ever did it I snorted it, I went straight in and snorted it.... he split it in half, he took half and he let me take half....and I will probably say within about 20 minutes I started feeling the effects from it and I loved it. Like I thought it was the greatest drug ever made.... loved how it made me feel very....calm,

very relaxed, like, I felt numb to everything. That's what I really liked about it, like nothing was bothering me.

Family: A few participants (n=2) explained either learning about pills through spending time at friend's house where the parents were misusing pills or via misuse by a parent or other family member.

Oral: One 25-year-old female knew her father smoked marijuana and misused prescription medications that were provided to him by a family member. She described initiation by mouth by taking pills from her father's drawer:

I didn't know what they were for a while, so I didn't take them. I knew what the weed was though, and I saw it in his drawer...I want to say 9th grade, when I knew what Vicodin and Xanax were, and I knew my dad had them. How did I know what they were? Through friends that were taking them. Like, I would see what they looked like and they told me what they were. So I would take a couple Vicodin's and a couple of Xanax, and I give my friend one and me one, and like, it felt good and like, we felt good....We did Vicodin first and then we tried the Xanax.... so then I just loved them. So like, I kept on taking, taking them and I knew he couldn't say anything because I was old enough at that point to know that he shouldn't have had them, and he couldn't be like, where is my Vicodin and Xanax....I loved that I felt more comfortable around people. I felt that I was the cooler person, my attitude on it. I was just happier.

Snorting: A 29-year-old female who initiated at age 20 explained being shown how to snort by a family member:

When my cousin first gave me the blue OxyContin, he's like, "Just sniff it. Just crush it up and sniff it". . . . I threw up! I didn't like it, and then they next day I'm like, 'I want to do it again. . . . it became a daily thing after that first day. . . . So I did it again and it didn't make me sick. . . . It gave me more self-confidence. I was able to complete tasks. . . . Energy, energy. I was cleaning the house with like a toothbrush. The house was clean all day, I had dinner ready, my daughter was in school, I signed her up for five different programs after school, and I had so much energy to do this. Every day I needed it. First I would need three, then it was five, then it was ten, then I was taking twenty a day and I couldn't afford it. . . . so that's when I started stealing from everybody, selling everything I had, sold my Rolex, my car, everything.. . .

Alone, misusing own prescription: Some of the participants had their first experience with POs through a legitimate prescription they received as a result of an injury (n=4). One 25-year-old male explained that his mom had been monitoring his use following multiple surgeries, but he ended up finding the leftover pills and taking them orally for non-medical purposes:

I lost my scholarship on the second tear during my senior season. I was out for my whole senior season so they just kind of cut me. . . . I came back in town, and I found all my pain killers and started taking them. And I occasionally started using Oxys on the street whenever I could get them. And then once I got that full time job, they just-I had money on me, and so that's what I used it for.

Discussion

This is one of the first studies, to our knowledge, that sheds light upon the social context of PO initiation and its relationship to alternate routes of administration among opioid dependent young adults entering detoxification treatment. Our findings complement other literature citing social settings as the most common contexts for initiation to non-medical prescription drug use [16], and PO initiation specifically [5,18,21]. Interestingly, our data contained a higher

proportion of non-oral initiates that those reported in other prior studies of young adult PO misusers [5,18], suggesting that the use of alternate routes may be more prevalent than previously reported.

Given that alternate routes have a more reinforcing, quick, and intense onset that would not typically occur as a result of swallowing, these methods of ingestion have been found to be favored among experienced prescription drug abusers [23]. The large proportion of our sample initiating via alternate routes, coupled with the fact that alternate routes have been linked to increased risk of addiction [14,24-26], illuminates a significant public health concern in regard to the development of a more rapid trajectory to substance dependence and deleterious health consequences [15,27]. It is also important to note that, similar to other studies of young adult prescription drug initiates, none of our participants reported concern about the safety of misusing POs. Research among young adult samples has documented the perception that prescription medications are purer, less harmful, and safer to use [8,16,18,28]. Although young adult PO users may benefit from early education related to the potential addictive properties of POs, our findings highlight how misconceptions related to the safety of PO misuse can create a significant challenge to PO drug misuse prevention efforts.

Our results also point to the potential utility of abuse deterrent drug formulations to prevent tampering [11,12,29-31]. Despite these developments which may be useful in decreasing the misuse of POs, [11,29,31], it is difficult to determine whether these formulations actually cause decreases in PO misuse overall; ours and other published results suggest that PO misusers shift to non-abuse deterrent formulations or to heroin due to its increased availability, ease of use, and cheaper cost [29]. Given the high rates of initiation through tampering among our sample, the broader use of abuse deterrent formulations could have a significant impact on drug use escalation among youth.

Similar to other findings of those trying prescription medications for the first time, some of our participants reported misusing their own legitimate prescriptions [5,8,16,20]. Among our sample, young men with sport injuries tended to initiate via oral routes and in isolation; it is likely that peers norms associated with use learned within a social context seem to create a situation by which alternate routes are taught by others. These findings resonate with others which describe how exposure to injection via peer networks over time facilitated transitions to injecting among heroin users [32].

Our findings related to women also seem to complement those already existing in the drug literature; nearly all of the women in our study initiated in a context with others. These findings are similar to the larger body of research documenting how often women initiate drugs within social or romantic contexts [7,20,33].

There are several limitations to this study. First, we have a rather small sample size (n=20) from a specific age cohort. Further, the majority of the participants had access to a private medical detoxification facility through health insurance; most came from middle class or upper middle class households, making it difficult to generalize our results to other substance abusing populations. The study also relies on self-report data, which may be subject to reporting and social desirability bias and recall problems; however, the numerous reports of legal problems, treatment histories and chronic relapse, and abuse histories by participants suggest that data were not biased by substantial under-reporting of socially undesirable behaviors. This research is also based on cross-sectional data, which does not allow for

the examination of changes over time. Further, our data do not provide direct evidence that initiation context dictates the route of administration, however, the fact that all those initiating via alternative routes did so in a social context suggests that peers have an influence on how drugs are administered.

Conclusion

Our findings suggest that the social context of initiation among young adult PO misusers has an influence on the use of alternate routes of administration; those initiating alone took pills orally, whereas those starting via an alternate route almost always did so with one or more peers. These results can begin to guide prevention and intervention strategies to address the problem of increasing numbers of opioid initiates, particularly those initiating via alternate routes. Moreover, given that participants in our sample initiating via non-oral routes tended to have a shorter time frame between initiation and first admission to drug treatment, we speculate that future research examining PO initiation routes among larger samples could be useful in the development of interventions aimed at potentially reducing time to dependence. Further, it would be useful to more closely examine how the use of abuse deterrent formulations may slow this trajectory. Interventions to slow the progression of PO initiation to dependence may involve educating youth about the risks associated with the non-medical use of POs, and the increased risk of developing dependence based on route of administration, and associated health consequences.

Declaration of Interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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