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The prevalence and correlates of single cigarette selling among urban disadvantaged drug users in Baltimore, Maryland

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Abstract

Background—Selling of single cigarettes, also known as loosies, is a public health concern. Loosies allow for those with fewer resources to buy cigarettes without having to purchase a pack. Selling of loosies may cue smoking behaviors. In the US, socioeconomically disadvantaged populations have high rates of smoking and illicit drug use and the selling of loosies appears to be linked to the urban informal economy. We examined the proportion and frequency of cigarette selling and roles in the informal economy associated with selling loosies among a sample of urban drug users.

Methods—There were 801 participants, recruited by community outreach, assessed at baseline, who were enrolled in an HIV prevention intervention for drug users.

Results—Most (89%) smoked cigarettes in the prior 30 days, of whom 92% smoked daily. Self-reported selling of cigarettes was common with 58% reporting that they had sold cigarettes within the last six months; 20.4% reported selling cigarettes a few times a week and 7.4% reported daily selling of cigarettes. In a stepwise regression model, four sources of income were associated with frequent cigarette selling: providing street security (OR=2.214, 95% CI 1.177–4.164), selling food stamps (OR=1.461, 95% CI 1.003–2.126), pawning items (OR=2.15, 95% CI 1.475–3.135), and selling drugs (OR=1.634, 95% CI 1.008–2.648).

Conclusion—There is a high rate of selling loosies among urban substance users. The wide availability of loosies may promote smoking. Smoking cessation programs with drug treatment and economic development programs may help to reduce economic pressures to sell loosies.

Keywords

cigarette selling; opiates; crack cocaine; informal economy; loosies; urban health

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Conflicts of Interest: None

1. INTRODUCTION

Selling of single cigarettes, also known as loosies, and other similar stick forms of tobacco products, such as bidis, is of potentially great concern to the field of tobacco control. The potential concerns linked to the availability of single cigarettes for purchase are numerous. Loosies allow for those with fewer resources, especially those who are underage or impoverished, to buy cigarettes without having to purchase a whole pack. Sellers of loosies in public (rather than retail) spaces may cue smoking behaviors, even in the absence of advertisements and active smokers. When a smoker purchases a loose cigarette they are unlikely to be exposed to a warning label. The selling of single cigarettes is well documented in some countries (Kostova et al., 2012; Linetzky et al., 2012; Thrasher et al., 2011). Data from the Global Adult Tobacco Survey suggests that most cigarettes or bidis are purchased by the stick in Philippines, Bangladesh, and India. In Brazil, Mexico, Thailand, Uruguay, and Vietnam over one-quarter of cigarettes are purchased as single sticks (Kostova et al., 2012). Although a few studies have examined the buying of single cigarettes (Smith et al., 2007; Thrasher et al., 2009), which is illegal in many countries, little is known about the sellers of loosies and their tobacco consumption patterns. In order to develop appropriate and effective programs and policies to monitor and address the issue of buying and selling of loosies, it is critical to understand the economic motives and the social context of these transactions. In the US, the selling of loosies has been primarily reported in urban low income neighborhoods (Smith et al., 2007; Stillman et al., 2007).

In the US, socioeconomically disadvantaged populations continue to have high rates of smoking (Centers for Disease Control and Prevention (CDC), 2009, 2011; Garrett et al., 2011). In the US, smoking is more prevalent among those living below the federal poverty level, the unemployed, and those with less education (Barbeau et al., 2004; CDC, 2011; Substance Abuse and Mental Health Services Administration (SAMHSA), 2008). Disparities in smoking behaviors are not limited to initiation; the odds of successfully quitting are also strongly associated with level of education in the US (CDC, 2009). Moreover, Turrell et al. (2012) found that even after adjusting for individual-level factors, residents of disadvantaged neighborhoods were less likely to quit over time leading to greater inequality in smoking rates. The ways in which neighborhood characteristics may shape smoking and quitting behaviors are not yet well understood. One potential contributing factor to continued high rates of smoking among disadvantaged and minority inner city residents is the targeting of cigarette advertisements to these groups (Barbeau et al., 2005; Laws et al., 2002; Seidenberg et al., 2010), and the high density of stores that sell cigarettes (Fakunle et al., 2010; Hyland et al., 2003). Another potential contributing factor is the availability of loosies.

The buying and selling of loosies has been documented as part of the informal economy of impoverished urban neighborhoods (Smith et al., 2007). Increasing the price of cigarettes has reduced consumption in many populations (CDC, 2000), and theoretically lower income populations should have greater price elasticity (Townsend et al., 1994). The continued high rates of tobacco use in extremely economically disadvantaged communities suggest that more resources and approaches are necessary to reduce the high levels of smoking in these communities.

Loosies have been implicated in easy access to cigarettes among minority youth (Klonoff et al., 1994); a sample of 156 urban youth, found that most smokers bought single cigarettes daily (Stillman et al., 2007). Another study found that loosies were purchased most frequently by individuals with low income and young adults (Thrasher et al., 2009). Non daily smoking has been linked with buying loosies (Sacks et al., 2012). However, it is

unclear whether loosies impede, facilitate, or have no impact on quit attempts (Thrasher et al., 2011).

One potentially relevant subpopulation to consider in relation to the availability of a source of single cigarettes in urban neighborhoods is illicit drug users. A qualitative study of young smokers' perceptions of the buying and selling of loosies identified drug users as frequent sellers of loosies (Smith et al., 2007). Numerous studies have documented high rates of tobacco use among illicit drug users (Guydish et al., 2011). A review of 42 addiction treatment studies in the US between 1988 and 2008 revealed that smoking prevalence per year among those enrolled in the studies ranged from 65% to 87%. Additionally, the review revealed that there was no change in the rates of smoking among this population during the two decades of study (Guydish et al., 2011). Despite the persistently high levels of smoking among this population, there are surprisingly few data on patterns of tobacco use among opiate and cocaine users who are not in treatment. One study of a community sample of HIV negative daily heroin injectors found that most (91%) reported cigarette smoking (Harrell et al., 2012). However, in this study the authors did not report on the frequency of smoking. Another study of individuals seeking out-patient treatment for cocaine-dependence, that compared smokers to non smokers, found that smokers were younger, less educated, earned less money, began cocaine use at an earlier age, used cocaine more frequently, were more likely to inject or smoke cocaine, and had higher scores on the Addiction Severity Index (Roll et al., 1996).

The role of illicit drug users in the informal economy associated with selling illicit drugs has been documented. Impoverished urban drug users have reported survival strategies of working in the drug economy packing drugs, providing street security, and looking out for police (Curry and Latkin, 2003; Sherman and Latkin, 2002). Other income generating strategies that have been reported include selling food stamps and informal paid employment (Dickson-Gomez et al., 2009). In the present study, we examined both the cigarette smoking patterns among opiate and cocaine users as well as drug users' role in selling loosies. Specifically, we examined the proportion and frequency of cigarette selling as well as roles in the informal economy associated with selling loosies.

2. METHODS

2.1 Recruitment and Data Collection

The data used in these analyses were from baseline interviews conducted as part of the Workshop Project, a randomized controlled trial of a cognitive behavioral intervention designed to decrease depressive symptoms and HIV risk among drug users (ClinicalTrials.gov Identifier: NCT01380613). The study took place in Baltimore, MD, USA. Recruitment and baseline interviewing was conducted between July 2009 and January 2012.

Participants were recruited from areas purported to have high levels of drug activity. Recruitment methods included street outreach, word of mouth, posted advertisements, and referrals from community agencies. Eligibility criteria for participation in the study included (1) being between 18 and 55 years; (2) willingness to attend group sessions; (3) currently living in Baltimore City; (4) willing to take an HIV test or provide documentation that they are HIV positive; and either (5) report having injected drugs 3 or more times in the past week; or (6) report having smoked crack or sniffed cocaine or sniffed heroin in the past 6 months. If the participant smoked crack or sniffed cocaine or sniffed heroin in the past 6 months and had not injected 3 or more times in the past week, they had to have one of the following sex risks: (a) 2 or more sex partners in past 6 months, (b) a sex partner who injected drugs in past 6 months, (c) a sex partner who smoked crack in past 6 months, or (d)

a sex partner who is HIV positive. Exclusion criteria included (1) being enrolled in another HIV behavioral intervention or depression study in the past 3 years, or (2) being enrolled in another study conducted at the same research clinic in past the 5 years. Smoking cigarettes or using other tobacco products was not an eligibility criterion.

Following recruitment and verification of eligibility, clients were scheduled for an interview at a community-based research clinic. Upon arrival at the clinic, participants provided written consent following which a trained interviewer administered the baseline interview. During the baseline interview, clients were asked about a number of different topics including sources of income, drug use, cigarette use, and cigarette selling. All participants that completed the baseline interview received \$35 in compensation. All study protocols and procedures were reviewed and approved by the [name withheld for review] Institutional Review Board.

2.2 Measures

To assess cigarette smoking, participants were asked “Have you smoked cigarettes in the last 30 days?” For those who responded “yes” they were asked, as a brief measure of nicotine dependence (Diaz et al., 2005), “On an average day, about how many cigarettes do you smoke?”, and “How soon after you wake up do you smoke your first cigarette?” Participants were also asked “Are you currently interested in quitting smoking?” and “In the past 6 months, how often have you sold cigarettes?” In a latter section of the survey, participants were asked about a list of ways that they obtained money in the past 30 days and how much money they got altogether from all sources. The list included pawning or selling personal items; obtaining money from family, friends, or sex partners; selling drugs; providing street security for a drug dealer; hacking (providing informal taxi services); selling or trading food stamps; social security payments; and doing odd jobs. A subset of participants (the first 488 participants who were administered the survey) was also asked about their perceptions of cigarette selling in their neighborhoods with the question, “In the past week, have you seen anyone selling loosies (loose cigarettes) on your block?”

2.3 Data Analysis

The primary outcome of interest for these analyses was income generating activities associated with selling cigarettes. Bivariate Chi-square and multivariate logistic models were computed. Variables that trended toward significant in the bivariate analyses ($p < 0.15$) were included in the multivariate model and entered simultaneously. In addition, as the income generating activities were correlated, we also employed a backward stepwise regression model. Demographic variables of age, gender, and education, as well as smoking status were first entered and the second block of variables utilized the backward stepwise procedure.

3. RESULTS

There were 801 participants at baseline. For three participants the data on cigarette selling were missing and these participants were, therefore, removed from the analyses. The remaining 798 individuals were between the ages of 19 and 55 with a mean of 43 years of age. There were slightly more men (57.1%) than women (42.9%) in the study. A significant proportion of participants had less than a high school education (46.1%) and the vast majority of the sample (96%) was unemployed at the time of their baseline visit. Including both legal and illegal sources of income, most of the sample (83.3%) reported having less than \$1000 of income per month with over half of the sample (51.3%) reporting less than \$500 of monthly income. The majority (72.8%) of the participants reported crack use and about half (48.2%) reported injecting drugs in the prior 6 months.

The vast majority (89%) of participants reported that they smoked cigarettes in the prior 30 days. Of those who smoked, 92% (653) reported smoking daily, with 32% reporting smoking fewer than 10 cigarettes a day, 37% smoked ½ pack (10 cigarettes) and 31% reported smoking one or more packs per day. Almost half (46%) reported smoking within 5 minutes of waking, and an additional 37% smoked within 30 minutes. Most (71%) indicated that they were interested in quitting. Of those 488 participants who were queried about whether they had seen anyone selling loosies on their block in the prior week, 68.9% reported they had witnessed the selling of loose cigarettes on their block during that time. Self-reported selling of cigarettes was common with 58% reporting that they had sold cigarettes within the last six months; 20.4% reported selling cigarettes a few times a week and 7.4% reported daily selling of cigarettes. Only 13 individuals (3.5%) reported selling cigarettes but not smoking.

In the subsequent analyses, the 28% of respondents who reported selling loosies a few times a week or more were compared to those who never sold or only a few times in the prior six months. As seen in Table 1, in the bivariate analyses, individuals who frequently sold cigarettes as compared to those who never or infrequently sold cigarettes were less likely to have a 12th grade or higher education. The frequent sellers were also statistically significantly more likely to report making money from a range of activities including pawning or selling personal items, selling food stamps, hacking, providing street security for a drug dealer, and selling drugs. Frequent cigarette sellers were also marginally more likely to report obtaining money from family or friends. In a multiple logistic regression model, which included all the variables in the bivariate model; lower levels of education, pawning or selling personal items, and providing street security for a drug dealer remained significantly associated with frequently selling loosies. Selling or trading food stamps and selling drugs became marginally associated with frequently selling loosies.

Since the variables that assessed source of income tended to be correlated, we also conducted a backward stepwise logistic multiple regression analyses. First the demographic variables (unemployed in prior 6 months, gender, age and level of education) were entered along with current smoking status. The second block utilized backward conditional regression with removal at $p > .10$. In this model, four sources of income were associated with frequent cigarette selling: providing street security (OR=2.214, 95% CI 1.177–4.164), selling food stamps (OR=1.461, 95% CI 1.003–2.126), pawning items (OR=2.15, 95% CI 1.475–3.135), and selling drugs (OR=1.634, 95% CI 1.008–2.648).

4. DISCUSSION

Over one quarter of the sample of illicit drug users reported selling cigarettes at least a few times a week and 7% reported daily selling of cigarettes. This represents a large number of cigarette sellers, with over 200 individuals in our sample alone who sell cigarettes at least a few times a week. From the study results it does appear that individuals who sell cigarettes are also more likely to engage in a range of other informal income generating activities including pawning items and selling food stamps.

The results of the study raise a number of questions. We do not know who buys these single cigarettes and how this access to cigarettes influences smoking patterns. We also do not know how many people are actively selling cigarettes and how many people simply sell cigarettes to individuals who may see them smoking and offer them money for a cigarette. It is likely that those who sell cigarettes daily are selling them for income. Yet it is also unknown how much money is made through cigarette selling and if the funds acquired are used to buy cigarettes for personal consumption and/or to pay for illicit drugs.

It is highly unlikely that a criminal justice approach will work for reducing access to loosies in neighborhoods that have much more pressing criminal justice issues. These results suggest, however, that it is important to address tobacco availability from multiple angles. For illicit drug users, especially opiate users, providing drug treatment, including tobacco cessation treatment as well as economic opportunities for sources of income outside of cigarette selling may help reduce rates of smoking and reduce access to tobacco for other people living in low income urban communities.

This was not a sample of social smokers. The vast majority of participants smoked and smoked daily and despite having very low income, most of those who smoked consumed more than one-half of a pack of cigarettes per day. Over 90% smoked within the first hour of waking and smoked daily. Even among those participants who reported using illicit drugs infrequently and did not inject drugs, the vast majority were daily smokers. The smoking patterns of this community sample of drug users closely resemble smoking patterns of drug users seeking treatment (Clemmey et al., 1997; Nahvi et al., 2006; Toussaint et al., 2009).

It is important to note that most smokers reported that they wanted to quit. Although smoking cessation is a high priority for public health, there has been a mixed level of effort to reducing smoking among illicit drug users. A recent analyses of smoke free laws in New York substance abuse treatment programs found that clients were significantly more likely to quit smoking after the implementation of the law (Guydish et al., 2012). Yet a study of data collected from administrators of 868 substance use treatment programs found that although the vast majority of programs ask all new clients about their tobacco use at intake, only about one-third offered nicotine replacement therapy and less than 20% offered formal counseling-based smoking cessation programs (Knudsen and Studts, 2011). In addition to enhancing smoking cessation programs in drug treatment programs, other medical and social service agencies that service drug users should also provide cessation programs and referrals.

There are several study limitations. The study outcomes were based only on self-reports and the sample was not random; participants who volunteered and were eligible are likely to be different from others in the community who did not volunteer and did not meet the eligibility requirements. Moreover, the sample only included illicit drug users. Nevertheless, given the high prevalence of loosie selling among this small group it is likely to have a disproportionate impact on access within the community.

Future research should examine the frequency, level of income generation, and community level impact of loosie selling. It is also critical to gain a greater understanding of how loosies may impede, facilitate, or have no impact on smoking uptake and cessation. It is also important to understand how the sale of loosies may detract from the impact of warning labels. People who routinely buy single cigarettes will not be exposed to pack warnings. If the availability of loosies were found to have no impact on smoking behaviors then selling single cigarettes with warning labels and quit information should be considered.

This study is also limited to a single city within one country. It is likely that the dynamics of loosie buying and selling differ substantially by country based on laws, enforcement policies, and prices as well as social norms of smoking and purchasing tobacco products. It has been documented that countries with relatively less affordable manufactured cigarettes are more likely to have less expensive alternative tobacco products, such as bidis and self-rolled cigarettes (Kostova et al., 2012). Internationally, it is important to continue to monitor both the buying and selling of loosies, assess their impact on tobacco consumption, and tailor policies and programs to minimize cigarette and other tobacco product availability.

The sellers of loosies are not homogenous. Some individuals are likely to actively sell cigarettes as a significant means of income generation, others may only sell them when asked by other smokers, and still others may provide them to friends or share the cost of a pack. Future research should also examine how informal social networks may influence access to tobacco products among impoverished populations.

The study findings highlight that in the US, there is a need to provide additional resources to tobacco control and smoking cessation programs that target impoverished urban communities, which have not benefited as much as more affluent communities from current tobacco control strategies. Taxation of tobacco products is considered to be one of the most effective tobacco control interventions (Chaloupka et al., 2011), and the selling of loosies circumvents the goal of increasing the price of the product for consumers. Warning labels and anti tobacco advertisements should be tested and developed for inner city populations as well and methods to reduce legal access and point of purchase advertisements.

Potential approaches to tobacco control in impoverished urban neighborhoods should also include community based methods. Community based methods of promoting smoke free policies at home and churches may also have an influence on cessation behaviors and smoking norms (Berg et al., 2012). However, there are major structural issues that may impede the reduction of smoking in impoverished communities. Stressful life events and depression are associated with relapse (Correa-Fernandez et al., 2012; McKee et al., 2011; Nakajima and Al'absi, 2012; Perez et al., 2008), and structural interventions are needed to address cessation barriers and the high levels of stressors in inner-city communities such as violence, substandard housing, unemployment, gangs, drug dealing, and crowding. Crowding may also exacerbate second hand smoking as well as cue smoking behaviors.

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TABLE 1

A comparison of participants that frequently sold cigarettes vs. those that did not by demographic characteristics and sources of income ($n=798$)

Characteristics	Total n (%) $n=798$	Cigarette Sellers n (%) $n=222$	Non-Sellers n (%) $n=576$	Test Statistic (t-test/Chi-square)	p value
Demographics					
Age (mean, SD)	43.4 (7.6)	43.6 (7.1)	43.3 (7.7)	0.377	0.706
Male	456(57.1)	130(58.6)	326(56.6)	0.252	0.616
Female	342(42.9)	92(41.4)	250(43.4)	0.252	0.616
Unemployed	766(96)	214(96.4)	552(95.8)	0.132	0.716
Education: Less than a high school diploma	368(46.1)	87(39.2)	281(48.8)	5.937	0.015
Sources of Income					
Hacking	43(5.4)	19(8.6)	24(4.2)	6.033	0.014
Social Security	177(22.2)	44(19.8)	133(23.1)	0.993	0.319
Money from Family and Friends	572(71.7)	169(76.1)	403(70)	2.996	0.083
Selling Drugs	123(15.4)	56(25.2)	67(11.6)	22.710	<0.001
Providing street security for a drug dealer	59(7.4)	33(14.9)	26(4.5)	25.075	<0.001
Selling or Trading Food Stamps	201(25.2)	78(35.1)	123(21.4)	16.150	<0.001
Pawning or Selling personal Items	208(26.1)	89(40.1)	119(20.7)	31.392	<0.001

TABLE 2

Multivariate association between selling cigarettes and demographic characteristic or sources of income, N=796

Variables	OR(95% CI)	<i>p</i> value
Demographics		
Age (mean, SD)	1.025(1.002–1.049)	0.031
Sex	1.002(0.071–1.421)	0.992
Unemployed	0.964(0.414–2.247)	0.932
Education: Less than a high school diploma	0.658(0.471–0.920)	0.014
Sources of Income		
Odd Jobs	1.118(0.793–1.578)	0.524
Hacking	1.680(0.850–3.318)	0.135
Money from Family and Friends	1.149(0.777–1.699)	0.487
Selling Drugs	1.587(0.977–2.578)	0.062
Providing street security for a drug dealer	2.132(1.130–4.022)	0.019
Selling or Trading Food Stamps	1.400(0.957–2.048)	0.083
Pawning or Selling personal Items	2.102(1.437–3.073)	<0.001