RESEARCH REPORT

“Unequal opportunity”: neighbourhood disadvantage and the chance to buy illegal drugs

C L Storr, C-Y Chen, J C Anthony

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In this research, we draw upon data from a cross sectional survey, with a nationally representative probability sample of household residents in the United States of America, investigating population level variation in the occurrence of a “drug purchase opportunity,” with coverage of urban-rural differences and variation across US census regions. This study also includes a more focused inquiry in relation to a gradient of neighbourhood level social disadvantage. With focus on a very early stage of drug involvement, population survey questions about drug purchase opportunity do not ask respondents to admit an illegal behaviour. As such, these questions may be less sensitive to measurement error, as compared with questions about recent illegal drug use.1 Assessment of a recent drug purchase opportunity is accomplished by asking respondents one or more standardised questions of the following form: “In the past 30 days, has anyone approached you to sell an illegal drug?” For most people, it is neither a particularly sensitive nor embarrassing experience to have encountered this form of drug purchase opportunity. In contrast, actual illegal drug use may be under-reported except when the respondent feels that confidentiality safeguards are complete.1

Our current focus on drug purchase opportunities is consistent with a more general orientation to the earliest stages of drug involvement. The trajectory of early drug involvement includes opportunities to try an illegal drug, often via peer to peer sharing without remuneration.2 However, as revealed in recent national surveys and in this research report, each month, noteworthy proportions of United States residents experience the chance to buy drugs from an illegal drug dealer.1 Our focus on gradients of neighbourhood level social disadvantage and drug purchase opportunities builds from prior research on drug exposure opportunities in general, which has been found to occur more often in socially disadvantaged neighbourhoods, though in a non-linear fashion as compared with a linear and monotonic gradient.3 For this reason, to be consistent with the approach used in prior research on drug exposure opportunity, we expressed occurrence of drug purchase opportunities as a function of a gradient in the level of local area disadvantage.

These focal points represent an appreciation of several important challenges in epidemiological research on drug involvement—namely, to understand the larger community contexts that might influence illegal drug use, to illuminate urban-rural differences and regional variations, and to clarify the variations in drug involvement that may exist within each community. For example, visibility of drug trafficking and related crime in disadvantaged inner city communities does not necessarily mean that all residents of these disadvantaged communities are using illegal drugs.4 None the less, even though no community in the United States seems to be immune from illegal drug use, drug trafficking activities often appear to be more well established and are more visible in disadvantaged urban neighbourhoods. Drug trafficking can offer economic advantages that are difficult to ignore in contexts of general impoverishment and an especially constrained set of pathways and access to material wealth or social status within a generally affluent society.5 In addition, social capital and social cohesion create contexts that should dampen participation in illegal behaviours and unhealthy developmental experiences, including drug purchase opportunities.6

Social controls that influence drug trafficking directly or indirectly may include efforts to increase police presence, to reduce disorderly conduct, fighting, and violence, and to discourage violations of broadly shared social norms in general. In addition, efforts to reduce graffiti and litter and to promote owner occupied housing may improve the physical environment of the neighbourhood while promoting social cohesion and rule abidance.7 Reno and colleagues, among others, have found that people are more likely to litter in local area environments that already have been trashed.8 The occurrence of gonorrhea is increased in neighbourhoods with deteriorated physical conditions, independent of poverty.9 The occurrence of violent crime is linked to a higher density of beverage alcohol outlets—the prime focus for alcohol purchase opportunities in the United States.10

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Study objectives: This study investigates whether subgroups of people living in disadvantaged neighbourhoods may be more likely to come into contact with drug dealers as compared with persons living in more advantaged areas, with due attention to male-female and race-ethnicity differences.

Design: Standardised survey data collected using stratified, multistage area probability sampling.


Participants: Nationally representative sample of household residents age 12 or older (n = 25 500).

Main results: Evidence supports an inference that women are less likely to be approached by someone selling illegal drugs. The study found no more than modest and generally null racial and ethnicity differences, even for residents living within socially disadvantaged neighbourhoods, where chances to buy illegal drugs are found to be more common.

Conclusions: Limitations of survey data always merit attention, but this study evidence lends support to the inference that physical and social characteristics of a neighbourhood can set the stage for opportunities to become involved with drugs.
Table 1  Sample description and estimated occurrence of a recent drug purchase opportunity, in relation to respondent characteristics: data from US National Household Survey on Drug Abuse, NHSDA 1998

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Estimated%</th>
<th>Odds ratio</th>
<th>95% CI</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>14239</td>
<td>4.1</td>
<td>1.0</td>
<td>(1.8 to 2.4)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Male</td>
<td>11261</td>
<td>8.2</td>
<td>2.1</td>
<td>(2.4 to 3.3)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 or older</td>
<td>18722</td>
<td>5.3</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12–17 years</td>
<td>6778</td>
<td>13.7</td>
<td>2.8</td>
<td></td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>11709</td>
<td>5.2</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black, non-Hispanic</td>
<td>5815</td>
<td>9.4</td>
<td>1.9</td>
<td>(1.5 to 2.3)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Hispanic</td>
<td>6795</td>
<td>9.3</td>
<td>1.9</td>
<td>(1.6 to 2.2)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Other, non-Hispanic</td>
<td>1181</td>
<td>4.1</td>
<td>0.8</td>
<td>(0.5 to 1.1)</td>
<td>0.20</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;12th grade</td>
<td>7783</td>
<td>4.1</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school or less</td>
<td>10939</td>
<td>7.7</td>
<td>1.9</td>
<td>(1.6 to 2.4)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>Census division</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North East and Mid Atlantic</td>
<td>3121</td>
<td>5.4</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Central</td>
<td>3680</td>
<td>5.9</td>
<td>1.1</td>
<td>(0.8 to 1.6)</td>
<td>0.57</td>
</tr>
<tr>
<td>South Atlantic</td>
<td>3959</td>
<td>6.4</td>
<td>1.2</td>
<td>(0.8 to 1.7)</td>
<td>0.30</td>
</tr>
<tr>
<td>South Central</td>
<td>4545</td>
<td>6.4</td>
<td>1.2</td>
<td>(0.9 to 1.7)</td>
<td>0.28</td>
</tr>
<tr>
<td>Mountain</td>
<td>4779</td>
<td>5.2</td>
<td>1.0</td>
<td>(0.6 to 1.4)</td>
<td>0.85</td>
</tr>
<tr>
<td>Pacific</td>
<td>5416</td>
<td>6.7</td>
<td>1.3</td>
<td>(0.9 to 1.7)</td>
<td>0.14</td>
</tr>
<tr>
<td><strong>Urbanicity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>3579</td>
<td>4.5</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>21930</td>
<td>6.5</td>
<td>1.5</td>
<td>(1.2 to 1.8)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>Past year drug use</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>22109</td>
<td>3.4</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>2797</td>
<td>28.5</td>
<td>11.3</td>
<td>(9.7 to 13.3)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>Quartile of neighbourhood disadvantage as rated by others living in the same area segment as the respondent</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Least disadvantaged</td>
<td>6314</td>
<td>4.2</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantile 2</td>
<td>6315</td>
<td>6.1</td>
<td>1.5</td>
<td>(1.2 to 1.8)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Quantile 3</td>
<td>6315</td>
<td>7.4</td>
<td>1.8</td>
<td>(1.5 to 2.2)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Most disadvantaged</td>
<td>6315</td>
<td>10.3</td>
<td>2.6</td>
<td>(2.1 to 3.3)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

*Any extra-medical or illegal drug use in past year including marijuana, cocaine and crack, hallucinogens, heroin, and inhalants. †Estimated prevalence (%), after sample weighting and post-stratification adjustment. Estimated OR = odds ratio from contingency table analysis, no statistical adjustment for covariates.

Against this background of prior theory and evidence,6 we posit that the event of a drug purchase opportunity is located within a larger macrosocial context. The macrosocial context may determine whether a person will experience a drug purchase opportunity at any given point in time. Based on this conceptual model, we are expressing a person’s experience of a recent drug purchase opportunity as a function of the more macrosocial context of social disadvantage. Notwithstanding the possibility that an accumulating number of individual drug opportunities will yield changes in the larger macrosocial context (for example, an increasing police presence), we do not think that any individual drug purchase opportunity at any given point in time. Based on this conceptual model, we are expressing a person’s experience of a recent drug purchase opportunity as a function of the more macrosocial context of social disadvantage. Notwithstanding the possibility that an accumulating number of individual drug opportunities will yield changes in the larger macrosocial context (for example, an increasing police presence), we do not think that any individual drug purchase opportunity, in general, will evoke a change in the larger macrosocial context in any direct fashion.

We acknowledge that our cross sectional study cannot disentangle social selection and social causation processes that might account for observed associations linking recent drug purchase opportunities back to levels of neighbourhood disadvantage.10–12 Moreover, the density of drug purchase opportunities at one point in time may have an indirect causal influence on later levels of neighbourhood disadvantage, although we know of no definitive evidence about this potential reciprocal influence. Likewise, no one has shown that a person’s experience of a drug purchase opportunity near home induces a later more generalised and negative evaluation of the local neighbourhood.

In our investigation, anticipating variation within community contexts, we have looked for male-female differences of the type that others have found in past studies of drug exposure opportunities in general and drug purchase opportunities in particular.2 5 22 By stratifying on levels within the gradient of neighbourhood disadvantage, we seek generalisable statements about male-female differences and race-ethnicity differences in the occurrence of drug purchase opportunities, holding constant the level of neighbourhood disadvantage. By stratifying to hold constant male-female and race-ethnicity differences, we seek generalisable statements about how occurrence of recent drug exposure opportunities might depend upon the gradient of neighbourhood disadvantage.

METHDS

Study population

Data under study are from the 1998 National Household Survey on Drug Abuse (NHSDA).22 For more than 20 years, NHSDA has provided cross sectional estimates on the prevalence and patterns of drug use in the United States. During these years a nationally representative sample of non-institutionalised civilians aged 12 or older has been drawn, using stratified, multistage area probability sampling. In 1998, as in other years, the first stage of the sampling started by selecting primary sampling units defined as metropolitan areas, counties, groups of counties, and cities. These primary sampling units are further divided into area segments approximating groups of housing units that closely equate to what we will refer to as neighbourhoods (for example, census tracts or block groups). Then, dwelling units within the area segments are sampled probabilistically. Finally, persons within occupied dwelling units are selected at random within pre-designated age groups. To provide more precise national estimates for subgroups, the NHSDA over-samples these groups (for
opportunities to buy illegal drugs

The survey sample in 1998 included 25 500 people; table 1 shows the sample breakdown on several sociodemographic characteristics. More than half of the sample was female (56%) and 46% of the sample was white, non-Hispanic. For youths aged 12–17 years, a parent or legal guardian was given a description of the survey and participant consent was obtained in accordance with procedures approved by the institutional review board responsible for this research. The overall response rate was 77% for the 1998 survey.

Data collection

Data came from responses offered by each participant during an individualised assessment session, typically at or near the home of the participant. The NHSDA survey team extensively trains their interviewers to minimise interviewer variation and bias. Trained interviewers follow a structured format while administering standardised questions with almost exclusively pre-specified and pre-coded response categories and virtually no allowance for probing questions. Self administered answer sheets are used to constrain under-reporting of sensitive issues. The result is an interview that leaves very little in the hands of the individual interviewer once assurances of confidentiality have been made, a private location for the interview has been secured, and issues of trust and rapport have been established.

Measures

Neighbourhood disadvantage

Participants were asked 11 standardised items about the physical environment of their neighbourhoods of residence (for example, abandoned buildings, graffiti) and about locally prevailing social conditions (for example, crime, family violence, helpfulness of people). These coded responses (for example, strongly agree = 1, somewhat agree = 2, somewhat disagree = 3, and strongly disagree = 4) were first summed for each person, labelled as the index person. A check for internal consistency using Cronbach’s α was 0.82, well above the 0.7 level advocated by Nunnally.23 Potential biases can arise when the same person in the same interview session has been asked questions about drug experiences and neighbourhood conditions. Therefore, instead of using each subject’s responses to characterise neighbourhood conditions in the local area, we calculated a mean neighbourhood disadvantage score by drawing values from every other respondent living in the same neighbourhood to purchase drugs, as well as male-female and race-ethnicity subgroup differences in the strength of association. For these analyses, the neighbourhood disadvantage score was standardised and index respondents were sorted into subgroups of disadvantage based on quartiles of the summary value calculated from responses made by the other respondents living in the same survey segment. Thereafter, the Stata multiple logistic regression command “syllogist” designed to handle special requirements of complex survey data was used to obtain weighted estimates while addressing possible confounding by individual characteristics that might influence a drug dealer to approach a person (for example, age). Additional models also adjusted for apparent differences between neighbourhood via education, urbanicity, and census regions. These estimates are not shown as they were not appreciably different from those found in models that adjusted for individual characteristics.

Table 2  Estimated odds ratios (95% CI) to index the strength of associations between neighbourhood disadvantage and being approached by someone selling drugs, NHSDA 1998

<table>
<thead>
<tr>
<th>Overall</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>aOR† (95% CI)</td>
<td>p Value</td>
</tr>
<tr>
<td>Least disadvantaged</td>
<td>4.2</td>
<td>1.0</td>
</tr>
<tr>
<td>Quartile 2</td>
<td>6.1</td>
<td>1.3 (1.0 to 1.6)</td>
</tr>
<tr>
<td>Quartile 3</td>
<td>7.4</td>
<td>1.5 (1.2 to 1.9)</td>
</tr>
<tr>
<td>Most disadvantaged</td>
<td>10.3</td>
<td>2.2 (1.7 to 2.7)</td>
</tr>
</tbody>
</table>

Table 2: Estimated odds ratios (95% CI) to index the strength of associations between neighbourhood disadvantage and being approached by someone selling drugs, NHSDA 1998

<table>
<thead>
<tr>
<th>Overall</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>aOR* (95% CI)</td>
<td>p Value</td>
</tr>
<tr>
<td>Least disadvantaged</td>
<td>2.2</td>
<td>1.0</td>
</tr>
<tr>
<td>Quartile 2</td>
<td>3.5</td>
<td>1.4 (1.0 to 1.9)</td>
</tr>
<tr>
<td>Quartile 3</td>
<td>4.3</td>
<td>1.4 (1.1 to 2.0)</td>
</tr>
<tr>
<td>Most disadvantaged</td>
<td>6.0</td>
<td>1.9 (1.4 to 2.6)</td>
</tr>
</tbody>
</table>

aOR, adjusted odds ratio; * with multiple logistic regression adjustment for covariates: being male, race, and age; †with multiple logistic regression adjustment for covariates: race and age.

Opportunities to use drugs

In earlier years of NHSDA fieldwork, a person’s drug exposure opportunity was assessed via standardised questions on age at first chance to try individual drugs such as marijuana and cocaine.20,20 These questions were dropped in 1995 to make room for other assessment modules, but in 1998 an assessment of drug exposure opportunity was reintroduced via a single question about recent experience: “In the past 30 days, has anyone approached you to sell an illegal drug?” In this revised assessment, it might be expected that recall bias and retrospection error are constrained by a focus on drug related experiences in the month before the date of the assessment. Sociodemographic characteristics of the respondents and their use of illegal drugs (marijuana, cocaine and crack, hallucinogens, heroin, and inhalants) also were assessed via standardised survey items.

Statistical analysis

Procedures under Stata version 7.0 (Stata statistical software, TX, USA) were used to take into account the complex sampling design and weights. Preliminary contingency tables yielded estimates for the unadjusted association between neighbourhood disadvantage and having a recent opportunity to purchase drugs, as well as male-female and race-ethnicity subgroup differences in the strength of association. For these analyses, the neighbourhood disadvantage score was standardised and index respondents were sorted into subgroups of disadvantage based on quartiles of the summary score calculated from responses made by the other respondents living in the same survey segment. Thereafter, the Stata multiple logistic regression command “syllogist” designed to handle special requirements of complex survey data was used to obtain weighted estimates while addressing possible confounding by individual characteristics that might influence a drug dealer to approach a person (for example, age). Additional models also adjusted for apparent differences between neighbourhood via education, urbanicity, and census regions. These estimates are not shown as they were not appreciably different from those found in models that adjusted for individual characteristics.
As a check on the study’s statistical power to detect subgroup differences, we conducted a post hoc power analysis for the contrast between our smallest racial-ethnic minority group compared with the largest group. In all but “Other, non-Hispanic” male and female sub-analyses, the sample sizes are large enough to detect an odds ratio estimate of 1.5 (or 0.67) as significant at $p = 0.05$, with $\alpha$ set at 0.05 and $\beta$ at 0.20.

RESULTS

Based on the survey estimates, during one month intervals in 1998, 6% of the survey population had a recent drug purchase opportunity (95% confidence intervals, CI = 5.6 to 6.6). Drug purchase opportunity was not limited to people living in urban areas or to those living in disadvantaged neighbourhoods (table 1). Subgroups with greater opportunity to buy drugs are males, those with less than 12 years of schooling, youths age 12–17 years old, and those living in urban areas. There was no substantial variation in occurrence of drug purchase opportunities across the six US census regions under study.

Residents in the most disadvantaged neighbourhoods were an estimated 2.2 times more likely to have an opportunity to obtain drugs (95% CI = 1.7 to 2.7, $p < 0.001$), as compared with residents in the lowest quartile of neighbourhood disadvantage (our reference category).

A gradient of excess occurrence of drug purchase opportunity was present for the both sexes, and separately for males and females (table 2).

As one half of the people who indicated an opportunity to purchase a drug in the 30 days before the interview indicated that they had used drugs in the past year, we explored a possibility that the association between neighbourhood disadvantage and opportunity to buy drugs was explained by drug dealers seeking out drug users or users seeking out dealers. We found that people with illegal drug use in the year before the interview were substantially more likely to have been approached by someone selling drugs. However, about 3% of US residents with no recent drug use also reported being approached by someone selling drugs (table 1). As neighbourhood disadvantage increases, there is an increased occurrence for drug purchase opportunities among those who did not use illegal drugs in the past year, whereas there is virtually no increase in such opportunities for recently active drug users except in the most disadvantaged neighbourhoods (table 2). Residents living in the more disadvantaged neighbourhoods were more likely to have experienced a recent drug purchase opportunity without respect to their own illegal drug use.

In analyses stratified for level of neighbourhood disadvantage, there was a generally stable inverse association between the odds of being approached by a drug dealer and being a female. As shown in the first four columns of table 3, no matter what the level of neighbourhood disadvantage, non-Hispanic white women, non-Hispanic black women, and

### Key points

- People who live in disadvantaged neighbourhoods are more likely to be approached by someone selling drugs.
- Teenage girls and adult women are less likely to be approached by someone selling drugs in all types of neighbourhoods.
- Results suggest there are no consistent racial-ethnic differences in being approached by drug dealers.

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**Table 3**

<table>
<thead>
<tr>
<th>Level of neighbourhood disadvantage</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Least disadvantaged</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic white</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>Other, non-Hispanic</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Quartile 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic white</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>Other, non-Hispanic</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Quartile 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic white</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>Other, non-Hispanic</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Most disadvantaged</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic white</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>Other, non-Hispanic</td>
<td>0.8</td>
<td>0.8</td>
</tr>
</tbody>
</table>

*Adjusted odds ratios adjusted for age.

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Table 4 presents evidence on gradients in the occurrence of recent drug purchase opportunity across levels of neighbourhood disadvantage. With the Human Genome Project, attention has shifted toward environmental contexts. The reservoirs of drug supply and vectors that convey drugs to vulnerable people is a necessary “agent”. The reservoirs of drug supply and vectors that convey drugs to vulnerable people also merit research focus, and a swing of the pendulum toward environmental contexts.

Hispanic women have roughly equivalent experience with recent drug purchase opportunities (for example, for non-Hispanic black women compared with non-Hispanic white women in the most disadvantaged neighbourhoods: aOR = 1.1, 95% CI = 0.6 to 1.9; for Hispanic women compared with non-Hispanic White women in the most disadvantaged neighbourhoods: aOR = 0.9, 95% CI = 0.6 to 1.6).

The male-female difference in odds of a recent drug purchase opportunity shows a very interesting pattern of subgroup variation that involves racial-ethnic minority status. Within neighbourhoods having the lowest levels of disadvantage (that is, least disadvantaged), in comparison with non-Hispanic white women, the non-Hispanic white males is much less pronounced. For example, in the highest quartile of neighbourhood disadvantage (last row of table 3), non-Hispanic White women in the most disadvantaged neighbourhoods: aOR = 0.9, 95% CI = 0.6 to 1.6).

Within the other quartiles of neighbourhood disadvantage, a similar pattern of male-female difference can be seen, but the subgroup variation associated with minority status of the males is much less pronounced. For example, in the highest quartile of neighbourhood disadvantage (last row of table 3), with non-Hispanic white females as a reference category, we see roughly comparable odds ratio estimates for non-Hispanic white males (aOR = 1.3), non-Hispanic black males (aOR = 2.1), and Hispanic males (aOR = 1.6).

In summary, men are more likely to experience drug purchase opportunities, as compared with women, no matter what the level of neighbourhood disadvantage. With respect to women and occurrence of drug purchase opportunity, there is no subgroup variation involving race-ethnicity, no matter what level of neighbourhood disadvantage is considered. With respect to men and occurrence of drug purchase opportunity, men in historically disadvantaged racial-ethnic minority groups generally are more likely to have experienced drug purchase opportunities when level of neighbourhood disadvantage is low, but there is no subgroup variation involving race-ethnicity at the highest levels of neighbourhood disadvantage.

In summary, the male-female difference in odds of a recent drug purchase opportunity shows a very interesting pattern of subgroup variation that involves racial-ethnic minority status.
neighbourhood disadvantage, with stratification on male-
female and race-ethnicity status. For example, in the first row 
of table 4, we see that for the non-Hispanic white population 
(males and females combined), the odds of a recent drug 
purchase opportunity are lowest at the lowest level of 
neighbourhood disadvantage, and become higher across 
quartiles of increasing neighbourhood disadvantage. 
However, increasing occurrence of drug purchase opportu-
nities across levels of neighbourhood disadvantage is not 
seen for all male-female and race-ethnicity groups. Row by 
row, in comparisons of females of the same race-ethnicity 
subgroup, those residents in neighbourhoods with the 
greatest levels of disadvantage tended to be more likely to 
be approached by a drug dealer as compared with racially 
similar females living in less disadvantaged neighbourhoods. 
In race-ethnicity subgroups of men, this pattern is not so 
prominent.

DISCUSSION
These results, based on a nationally representative sample of 
household residents within the United States, tend to 
indicate that people who live in disadvantaged neighbour-
hoods are more likely to be approached by someone selling 
drugs, consistent with a general idea that it is easier for 
residents in disadvantaged neighbourhoods to obtain illegal 
drugs. Overall, about one half of those with an opportunity to 
buy drugs reported using illegal drugs in the year before the 
interview, but even so, an estimated 3%-4% of non-users had 
recently experienced a drug purchase opportunity. The 
association between neighbourhood disadvantage and oppor-
tunity to buy drugs may be moderated by illegal drug use. 
Both active illegal drug users and non-users living in the 
most disadvantaged neighbourhoods were more likely to be 
approached by a dealer.

With respect to female-male differences, males were more 
likely than females to have had recent drug purchase 
opportunities, as discussed previously. This sex difference 
was highly consistent across all types of neighbourhood 
disadvantage: both males and females in disadvantaged 
neighbourhoods were more likely to be approached by 
someone selling drugs than their counterparts residing in 
more advantaged neighbourhoods.

With respect to race-ethnicity, non-Hispanic black and 
Hispanic area residents are somewhat more likely to have 
experienced a recent drug purchase opportunity, as compared 
with their non-Hispanic white neighbours, but the excess 
odds of drug purchase opportunities among males in these 
minority groups of the population, and are not 
characteristic of females. Indeed, table 3 shows three 
remarkable estimates that merit future attention: (1) by 
comparison with non-Hispanic white females, the females of 
Asian, Pacific Islander, and other non-black, non-Hispanic 
groups are generally less likely to have experienced recent 
drug purchase opportunities; (2) the same type of inverse 
association is seen for non-black, non-Hispanic minority 
male residents in the two most disadvantaged neighbourhoods; 
and (3) Hispanic men in the least disadvantaged neighbour-
hoods have a considerably greater chance to buy illegal drugs 
than other population subgroups, male and female. It might 
be best to check whether these results can be replicated in 
future surveys before anyone engages in detailed speculation 
about possible protective influences for Asian, Pacific Islander, 
and other non-Hispanic neighbourhood residents, or about 
the processes that differentiate Hispanic men living in 
the least disadvantaged neighbourhoods.

Despite the fact that the participants in this study come 
from a nationally representative sample, with data 
collected using standardised self report assessments, the 
cross sectional nature of the association merits attention. As 
mentioned in the introductory section of this article, this 
early study of drug purchase opportunities and neighbour-
hood environment has little resolving power with respect to 
underlying social causation and social selection processes 
that might lead to an observed association between levels of 
neighbourhood disadvantage and recent occurrence of drug 
purchase opportunities. For example, we cannot say that 
neighbourhood disadvantage leads to greater occurrence of 
drug purchase opportunities, or vice versa. And we cannot 
say whether people seeking drug purchase opportunities 
might move into neighbourhoods of greater social disadvan-
tage (that is, in an effort to get closer to drug purchase 
opportunities associated with neighbourhood disadvantage). 
As with the reciprocal process models that posit density of 
drug purchase opportunity as a cause of later neighbourhood 
disadvantage, these are processes best investigated in a future 
line of longitudinal investigations to build upon the founda-
tion of the current cross sectional data.

In addition, we again must acknowledge measurement 
complications. A limitation is the self report character of the 
data. It is possible, if not plausible, that the experience of 
being approached by a drug dealer near home yields a change 
in the evaluation of the local neighbourhood, and makes the 
local area residents more sensitive to other characteristics of 
disadvantage. A strength of this study is the use of multiple 
sources within the same community segments as raters of the 
neighbourhood environment, rather than relying on a 
person’s own report. In future research, other approaches to 
strengthen the measurement of neighbourhood disadvantage 
can incorporate independently recorded data (for example, 
arrest rates).

Another limitation of this study is that the location of the 
purchase opportunity is unknown. Many drug users travel 
into other neighbourhoods to obtain their drugs, and the 
drug purchase opportunity may not necessarily be reflective 
of what happens in their own residential neighbourhoods. In 
addition, sales are not the only vehicle of transaction in a 
drug purchase opportunity. Youths may be approached and 
enticed by free “samples” or allowed to share in the 
experience of a smoke or a hit.

Another challenge for future research is to evaluate 
suspected pathways or mechanisms that might link neigh-
bourhood contexts to having an increased opportunity and 
access to drugs. For example, neighbourhood may be 
associated with drug opportunities indirectly if there are 
increased social stressors and higher levels of psychological 
distress among residents in disadvantaged neighbourhoods. 
These psychological experiences may increase the likelihood 
of seeking drug sources, or may make a person with visible 
signs of social disengagement more likely to be approached 
by a drug dealer.

Conclusions
Limitations notwithstanding, this study adds new evidence 
about the potential importance of neighbourhood disadvan-
tage as a feature of environmental and psychosocial contexts 
that might help epidemiologists account for the non-random 
distribution of drug involvement in human populations. To 
develop effective community level interventions we must 
understand and seek to explain how various aspects of the 
social context (for example, neighbourhoods, schools, 
families, peers) work independently and jointly with one 
another. The evidence from this study suggests that teenage 
girls and adult women are less likely to be approached by 
someone selling drugs, no matter how disadvantaged the 
neighbourhood. If confirmed, this evidence of possible sex 
linked protection can be traced back to its sources (for 
example, different levels of parental monitoring for males 
compared with females, greater male involvement in
neighbourhood activities that may be associated with higher risk for drug exposure opportunities, or different gender specific outlets for obtaining illegal drugs). With new insights it may be possible to develop new methods to prevent illegal drug use across a range of social disadvantage. Programmes that target drug purchase opportunities while also changing the environment that supports the drug context might break cycles of drug involvement, as well as active drug seeking behaviour, which otherwise perpetuate drug associated public health hazards.

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