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Beyond income: Material resources among drug users in economically-disadvantaged New York City neighborhoods

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Abstract

Background—Little is known about material resources among drug users beyond income. Income measures can be insensitive to variation among the poor, do not account for variation in cost-of-living, and are subject to non-response bias and underreporting. Further, most do not include illegal income sources that may be relevant to drug-using populations.

Methods—We explored the reliability and validity of an 18-item material resource scale and describe correlates of adequate resources among 1593 current, former and non-drug users recruited in New York City. Reliability was determined using coefficient α , ω_h , and factor analysis. Criterion validity was explored by comparing item and mean scores by income and income source using ANOVA; content validity analyses compared scores by drug use. Multiple linear regression was used to describe correlates of adequate resources.

Results—The coefficient α and ω_h for the overall scale were 0.91 and 0.68, respectively, suggesting reliability was at least adequate. Legal income $> \$5000$ (vs. $\leq \$5000$) and formal (vs. informal) income sources were associated with more resources, supporting criterion validity. We observed decreasing resources with increasing drug use severity, supporting construct validity. Three factors were identified: basic needs, economic resources and services. Many did not have

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Contributors

Authors Galea, Ompad and Vlahov designed the study and wrote the protocol. Author Ompad conducted the literature searches and summaries of previous related work. Authors Cerdá, Crawford, Ompad and Nandi designed the analysis plan. Authors Nandi and Ompad undertook the statistical analysis, and author Ompad wrote the first draft of the manuscript. All authors contributed to and have approved the final manuscript.

Conflict of interest

All authors declare that they have no conflicts of interest.

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their basic needs met and few had adequate economic resources. Correlates of adequate material resources included race/ethnicity, income, income source, and homelessness.

Conclusions—The 18-item material resource scale demonstrated reliability and validity among drug users. These data provide a different view of poverty, one that details specific challenges faced by low-income communities.

Keywords

injection drug users; non-injection drug users; former drug users; poverty; material deprivation; factor analysis

1. Introduction

Poverty is an important social determinant of health (Marmot and Wilkinson 2003; Pfoertner et al., 2010; Stronks et al., 1998). In 2009, 14.3% of U.S. residents lived below the poverty threshold, while the 6.3% lived below 50% of the poverty threshold (i.e., in extreme poverty) (DeNavas-Walt et al., 2010). A significant increase in poverty between 2008 and 2009 (DeNavas-Walt et al., 2010), coupled with recent analyses suggesting the risk of poverty over the life course is increasing (Sandoval et al., 2009), underscores the growing importance of understanding poverty in the U.S.

Income-based measures of poverty, sometimes dichotomized as living at or below some percentage of a poverty threshold (Gillum et al., 2008; Thomas et al., 2005; Thomas et al., 2007) or income proxies (e.g., receiving benefits like free- or reduced-lunches for school children) (Ompad et al., 2006), have dominated in research despite important limitations (Bradshaw and Finch 2003). These measures are often insensitive to income variation among the poor (Sen, 1976), do not account for geographic variation in cost-of-living (Besharov and Couch, 2009; Rosenfeld, 2010), and are subject to non-response bias (Turrell, 2000) and underreporting because certain benefits (i.e., food stamps) are not included (Dorling, 1999). Further, most income measures do not account for illegal income sources such as street sales of cigarettes, pirated media (also known as bootlegging), illegal drugs and other commodities; commercial sex work; and theft. Illegal income sources may be particularly important for drug-using populations (Cross et al., 2001; DeBeck et al., 2007) and some other populations where they may be necessary for survival (Essien et al., 2004); studies have documented that 22–53% of illicit drug users report illegal income sources (Bourgois et al., 2006; DeBeck et al., 2007; Ompad et al., 2008a; Rondinelli et al., 2009).

Many social scientists now conceptualize poverty as a latent variable (Waglé, 2008). This is underscored by several threads of research, including that of Townsend (Townsend, 1979) who introduced the concept of a living standard, which reflects how people allocate their resources. Indicators of living standards are lists of goods and services that reflect socially perceived necessities for adequate participation in society (Pfoertner et al., 2010). Going without these perceived necessities is considered to be material deprivation (Desai and Shah, 1988; Townsend, 1979).

Describing and quantifying material resources and deprivation may shed light on the challenges faced when one considers implementing, or trying to adhere to, public health and medical recommendations vis à vis available resources. For example, Stronks et al. (1998) observed an increasing risk of bad perceived health associated with decreasing income. They estimated that approximately half of the increased risk of bad health was related to deprivation, based in part on Townsend's living standards, among individuals with low income. A recent study of HIV positive men and women found that poor adherence to

antiretroviral therapy was associated with food insufficiency and hunger (Kalichman and Grebler, 2010).

For drug users in particular, heterogeneity in economic conditions may explain why some drug users recover while others persist (Roddy and Greenwald, 2009) and why some may benefit from interventions and others do not. There is some preliminary evidence for such an association from ecological and multi-level studies, but a dearth of research at the individual-level. An ecological study in New York City (NYC) found that the rate of fatal accidental cocaine and opiate overdoses between 1990 and 1992 was strongly associated with neighborhood poverty (Marzuk et al., 1997). A study of injection drug users (IDUs) in Baltimore found that those living in neighborhoods where less than 10% of residents lived in poverty were significantly less likely to have injected in the preceding six months as compared to IDUs living in neighborhoods where 30% or more residents were in poverty (Nandi et al., 2010). Having reliable and valid measures of individual-level material resources and deprivation among drug users would be very useful for understanding behavior, morbidity, and mortality.

Here, we explore the reliability and validity of a modified version of the Family Resource Scale (FRS) (Dunst and Leet, 1987) among current, former and non-drug users recruited from economically-disadvantaged NYC neighborhoods. The FRS was previously used in family and child outcomes research. We also describe demographic correlates of adequate material resources in this population. Few studies to our knowledge have investigated material resources and deprivation among illicit drug users.

2. Methods

The IMPACT (Inner-City Mental Health Study Predicting HIV/AIDS, Club and Other Drug Transitions) Studies were designed to examine the independent and interactive effect of neighborhood compositional and contextual characteristics as they relate to drug use, HIV and other blood-borne pathogens, and mental health (particularly post-traumatic stress disorder). The methods for neighborhood selection, sampling and recruitment have been described in detail elsewhere (Ompad et al., 2008b; Weiss et al., 2007). Initially, 36 NYC neighborhoods were included in the study: three neighborhoods in each of twelve larger communities. The 12 geographically dispersed communities were selected for high rates of HIV infection and heroin overdose and are primarily but not exclusively low income: four of the twelve are in the borough of Manhattan (East and Central Harlem, Chelsea, and the Lower East Side); three in the Bronx (South Bronx, Hunts Point, and Tremont); three in Queens (Long Island City, Corona, and Jamaica); and two in Brooklyn (Bedford-Stuyvesant and Bushwick). Two additional neighborhoods were added from the Far Rockaway community in Queens when recruitment in Corona was observed to be non-productive. Within the communities, field staff identified areas where drug market activities could be observed. Neighborhood boundaries surrounding these areas were defined by an ethnographer, in consultation with other study investigators, and were constrained to block group and or census tract boundaries so that U.S. Census data could be used for contextual analyses.

Recruitment was conducted using random street-intercept techniques (Miller et al., 1997). Starting at the southwest corner of a target block, outreach workers (OWs) walked clockwise around the block clicking hand counters when they passed an individual. Every fifth person passed was approached using a prepared script that described the study and invited people to be screened. OWs made note of when they approached someone and when someone approached them, along with the outcome of each interaction (i.e., escorted to appointment, scheduled an appointment, had a conversation, refused to have conversation,

ignored staff, walked away from staff). We also screened people who walked into our research storefront or onto the study recreational vehicle, making note that they were walk-ins rather than street-intercept recruits. Walk-ins knew of our work through experience either with our previous studies or through word-of-mouth from IMPACT Study participants.

Eligible participants were age 18 years or older, lived or spent at least half their time in the target neighborhood, and were willing to give a blood sample. We recruited injection drug users (IDUs), non-injection drug users (non-IDUs), former drug users (FDUs), non-drug users (NDUs) and club drug users (CDUs; defined as LSD, PCP, ecstasy, ketamine, GHB, or rohypnol users). IDUs must have injected at least once in the last three months. Non-IDUs had to have sniffed, ingested, or smoked heroin, crack, cocaine, and/or methamphetamine at least once in the last three months, but never have injected drugs in their lifetime. FDUs must have used heroin, crack, cocaine or methamphetamine by any route at least once in their lifetime, but not in the last three months. NDUs must not have used any drug in their lifetime, except alcohol or marijuana. CDUs must have used a club drug in the last three months; CDUs could also be IDUs or non-IDUs. Most of CDUs were polysubstance users and thus included in the IDU or NIDU group. The five people who reported only using club drugs were excluded from this analysis. A screening questionnaire was conducted to determine eligibility. Written informed consent was required for participation. Respondents were compensated \$20 for each interview. The study was reviewed and approved by the New York Academy of Medicine's Institutional Review Board.

2.1. Data collection

Cross-sectional interviewer-administered surveys were conducted from 2005 to 2009. Demographic variables included sex (i.e., male or female), race/ethnicity (i.e., black, Hispanic, white, or other), age, and sexual identity (i.e., heterosexual or homosexual/gay/lesbian/bisexual). Economic variables included income sources, income, and material resources. We asked about ten income sources in the last six months and which gave the most income. We collapsed the source that gave the most income into five categories: employment, public assistance, informal economy, income from someone else, and illegal activities. Employment was defined by collapsing three income sources: (1) having a regular job employed with a regular salary (full or part time) where they got paid with a check, received vacation benefits or had to clock in with a time card; (2) owning one's own business (like street vending, etc.); and (3) engaging in temporary work (including odd jobs, off-books, etc). Public assistance was captured in one item that asked about income from government benefits including Public Assistance, Welfare, Supplemental Security Income, and State or Federal Benefits (like food stamps, State Public Aid, disability, unemployment). Informal economy participation was defined by collapsing two income sources: (1) recycling cans, returning bottles for deposits, windshield wiping, or panhandling for money and (2) another source that was specified in a free text field. Specified sources included, but were not limited to, activities like selling items on the street (e.g., cigarettes, DVDs, CDs, garbage, scrap metal), delivering drugs, renting a room, borrowing and selling tools, playing in a band, cleaning apartments, and massaging. Income from someone else was captured in one item that asked about receipt of money from a parent, friend, relative, or spouse's income. Illegal activities were defined by collapsing three categories: (1) theft, robbing, stealing, or conning; (2) selling drugs; and (3) sex for money. For income, we asked about total legal (on the books and before taxes) and total untaxed (off the books) income in the past year using the following categories: no income, \leq \$5,000 (about \$400 per month), \leq \$10,000 (about \$800 per month), \leq \$20,000 (about \$1600 per month), \leq \$30,000 (about \$2500 per month), and $>$ \$30,000 (more than \$2500 per month). Because the income

distribution was limited, we dichotomized both income variables to $\leq \$5000$ versus $> \$5000$ per year.

To measure material resources, we adapted 18 items from the 30-item Family Resource Scale, which included items on physical and human resources and time allocation (Dunst and Leet, 1987; Van Horn et al., 2001). Five items were excluded because they focused on child-specific resources (i.e., time to be with child(ren), babysitting, child care/day care, money to buy special equipment/supplies for child(ren), and toys for child(ren)). Based upon our previous studies (Ompad et al., 2008a), we anticipated that a significant proportion of people would not have children and thus would have missing data on these items. Six time items were excluded because at the time of questionnaire development we were focused on material resources (i.e., time to be by self, for family to be together, to be with spouse/close friend, to socialize, to keep in shape and looking nice, and time and money to travel/vacation). We note that one time variable was retained (i.e., time to get enough sleep/rest) because it was hypothesized to be related to depression and was not asked in the same way elsewhere. One social network item (i.e., someone to talk to) was excluded because we asked about social networks in more relevant detail in another section of the questionnaire. We asked participants whether or not they and their family currently had adequate material resources to meet the specific needs of the family as a whole as well as the needs of individual family members on a six-point scale (never, rarely, less than half the time, about half the time, more than half the time, or always). Items included: food for two meals a day, house or apartment, money to buy necessities, enough clothes for self and family, heat for house or apartment, indoor plumbing or water, money to pay monthly bills, good job for self or spouse, medical care for self or family, public assistance, dependable transportation, time to get enough sleep/rest, furniture for home or apartment, telephone or access to phone, dental care for self or family, money to buy things for self, money for entertainment, and money to save. The material resources were roughly ordered from most to least basic. The items were summed to create a score with a potential range from zero (i.e., never enough resources for all items) to 90 (i.e., always enough resources for all items); thus a higher score suggests more resources. The original 30-item FRS had a coefficient α of 0.92 (Dunst and Leet, 1987).

2.2. Analysis

Reliability was determined using coefficient α and ω_h . Although coefficient α (Cronbach 1951) is the *de facto* standard measure of scale reliability, some have argued that it is a poor estimate of internal consistency (Revelle and Zinbarg, 2008) and that it does not measure internal consistency at all (Sijsma, 2009). Further, coefficient α tends to decrease as a function of multidimensionality (Cortina, 1993). An alternative measure of reliability is ω_h , which is the ratio of the sum of the correlations produced by the general factor to the sum of all the correlations. ω_h has been suggested when the scale is multidimensional and has unequal general factor loadings (Revelle and Zinbarg, 2008; Zinbarg et al., 2005). Both α and ω_h have the same range (i.e., zero to one) and similar interpretation: < 0.60 is unacceptable, $0.60-0.65$ is undesirable, $0.65-0.70$ is minimally acceptable, $0.70-0.80$ is respectable, $0.80-0.90$ is very good, and > 0.90 consider reducing the number of items (DeVellis, 1991; Dukes, 2005). To further assess reliability, we conducted an exploratory factor analysis using an oblique (promax) rotation to determine if (and what) underlying factors existed. We also calculated reliability statistics for each factor.

Criterion validity is established when a measure is associated with related constructs (DeVellis, 1991); thus we would expect that those with lower incomes would have fewer material resources than those with higher incomes and those with reliable income sources (i.e., employment or public assistance) would have more resources than those with less reliable income sources (i.e., informal economy or illegal activities). Criterion validity was

assessed by comparing mean scores for each scale item and the overall scale score by main income source (i.e., employment, public assistance, informal economy, income from someone else, and illegal activities). We also compared scale scores by legal and untaxed income.

A measure is considered to have construct validity when it behaves as expected in relation to another construct (DeVellis, 1991; Last, 2001); thus we would expect that those who currently used drugs (i.e., non-IDUs and IDUs) would have fewer material resources (and thus lower item means and scale scores) than those who were not currently using drugs (i.e., FDU and NDU). Construct validity was assessed by comparing mean scores for each scale item and the overall scale score by drug use status.

Mean item scores were compared using ANOVA. The Bonferroni multiple comparison adjustment was used to account for multiple comparisons across and between groups. Linear regression was used to determine differences in mean scale scores by key covariates and to determine significant correlates of having adequate material resources. Significant variables ($\alpha=0.05$) were entered into a linear regression model; those variables that remained significant were retained in the final parsimonious model. The factor analysis was conducted using MPlus Version 3.12 (Muthén and Muthén, 2004). ω_h was calculated in R (R Development Core Team, 2008). All other analyses were conducted with STATA 10.0 (STATA Corporation, 2009).

3. Results

Table 1 presents the demographic characteristics of the sample (N=1593). There were twice as many men as compared to women and 12.1% identified as homosexual, gay, lesbian or bisexual. The sample was predominantly Black and Hispanic; the mean age was 39.2 (range 18 to 70, data not shown). Most (64.9%) were current drug users, 21.5% were former users, and 13.6% were non-drug users; 40% had been recently homeless. The most frequently reported main income source was public assistance, followed by employment and illegal activities. In terms of income, most reported legal and/or untaxed incomes of \leq \$5000/year. A majority (65.1%) had children but only 28.3% financially supported someone aged 18 or younger.

The 18-item modified FRS scale demonstrated acceptable reliability (data not shown). The coefficient α was 0.91. Each individual item had an α between 0.90 and 0.92, which is considered to be very good (DeVellis, 1991; Dukes, 2005). The ω_h was 0.68, which is considered minimally acceptable.

Table 2 presents the results of the factor analysis. No item was excluded from the final scale based on low factor loadings; all items had a loading of at least 0.25 on one factor, as suggested by DeVellis (1991). We selected a three-factor model based on the scree plot and eigenvalues (1.439 for a 3-factor model and 0.726 for a 4-factor model). The RMSEA (Root Mean Square Error of Approximation) estimate was 0.071 and the RMR (Root Mean Square Residual) was 0.0316, suggesting good model fit (Hu and Bentler, 1999). Factor 1 was “basic needs,” factor 2 was “economic resources,” and factor 3 was “services.”

Table 3 presents the criterion validity analysis. The mean rating for each item was significantly different across all income sources. Generally, those with regular income sources (i.e., employment and public assistance) and those who received most of their income from someone else had higher mean item ratings and scale scores (i.e., higher score means more material resources) as compared to those who received most of their money from the informal economy or illegal activities. There was one exception: those who reported employment as a main income source had a lower mean rating for the public

assistance item than all other groups. This is not surprising, as public assistance eligibility is income-based. We also tested group differences in the mean summary score by legal and untaxed income (table 4). Those with a legal income \leq \$5000 had significantly lower mean scale scores as compared to those with incomes $>$ \$5000. No significant difference was observed for untaxed income, possibly due to recall or reporting bias. Collectively, these results suggest that the scale has criterion validity.

Table 5 presents the construct validity analysis. For most (78%) items and the scale score, there was a trend such that NDUs has the highest mean scores, followed by FDUs, non-IDUs and finally IDUs. There were a few exceptions. IDUs had a lower mean score for public assistance as compared to non-IDUs and FDUs, but a higher mean score as compared to NDUs. This is likely because NDUs are more likely to be employed as compared to IDUs. Non-IDUs had lower mean scores than FDUs on all items except time to get enough sleep/rest, which was the same. Compared to NDUs, non-IDUs had lower mean scores on all items except public assistance (again, likely due to differences in employment) and medical care and dental care for self/family. Compared to NDUs, FDUs had lower mean scores on all items except food for two meals per day, and medical care and dental care for self/family. Collectively, these results suggest that the scale has construct validity.

We next determined the proportion of individuals who had adequate resources for each item less than half the time (data not shown). Few respondents reported that their basic needs were not met. Specifically 16.1% had inadequate resources for two meals per day, 24.0% for a house or apartment, 20.6% for clothes, 21.3% for heat, 15.3% for indoor plumbing or water (15.3%), 31.5% for money to pay monthly bills, 28.2% for furniture (28.2%), and 27.2% for a telephone or access to phone at least half the time. Few reported that they had inadequate resources for medical (17.7%) or dental care (22.2%) but almost one-third (32.5%) reported inadequate public assistance. We observed more deprivation with the resource scale items: 30.6% had inadequate resources for money to buy necessities, 65.2% for a good job for self or spouse, 31.5% for dependable transportation, 34.3% for time to get enough sleep/rest, 40.2% for money to buy things for self, 52.9% for money for entertainment, and 72.4% for money to save at least half the time.

Table 4 presents the correlates of adequate material resources. The adjusted mean scale score for our study population was 73.06 (95% confidence interval [CI]: 70.07, 76.05). In a multivariate linear regression model that controlled for race/ethnicity, main income source, legal income, homelessness and drug use, Hispanics experienced more deprivation as compared to Blacks. Significantly lower material resource scores were observed among IDUs (as compared to NDUs) as well as those reporting a legal income \leq \$5000/year, informal economy or illegal activities as main income sources (as compared to employment), and homelessness in the last six months.

4. Discussion

There are two important findings from this analysis of the modified FRS scale: among a population of poor current, former and non-drug users in New York City, (1) the modified 18-item FRS scale demonstrated reliability and validity as a measure of material resources and (2) there was notable variation in material resources. These results and their implications are discussed below.

Our results support the reliability and validity of the modified FRS scale among drug users and other individuals recruited from economically disadvantaged urban neighborhoods. The coefficient α and ω_h suggest the overall scale had at least acceptable reliability. The lower estimate of reliability indicated by ω_h as compared to coefficient α is likely due, in part, to

the multi-dimensional nature of the scale and heterogeneous population in this study. The basic needs and economic resources factors demonstrated at least respectable reliability and the services factor demonstrated respectable reliability for α and ω_h .

There was also support for criterion and construct validity. For the former, the scale items and overall score varied as expected by income source those with formal income sources (i.e., employment or public assistance) had more material resources than those who had informal income sources (i.e., informal economy or illegal income). Similarly and consistent with recent analyses of the full FRS (Brannan et al., 2006), those with higher legal incomes had more material resources than those with lower legal incomes. For construct validity, the scale also performed as expected – current drug users had fewer resources than former drug users and non-drug users. Further, using injection drug use as a crude measure of drug use severity, we see a pattern of decreasing material resources with increasing drug use severity as evidenced by lower resource scale scores among IDUs as compared to non-IDUs.

Other studies have found that IDUs report more income than non-IDUs (Highfield et al., 2007; Roddy and Greenwald, 2009), but few studies have looked at differences in material resources among these groups. We did not find significant differences in legal and untaxed income between IDUs and non-IDUs (data not shown). Differences in resources may reflect differences in income as well as differences in how that income is allocated.

Former drug users reported better adequacy of medical and dental care as compared to non-drug users. These differences may be partially explained by differences in HIV prevalence by drug use status. In New York City and State, HIV positive individuals are eligible for an array of health and social services. To further explore this we looked at HIV status (data not shown); as expected, HIV prevalence was lowest among the NDUs (2.5%) and higher among the FDUs, non-IDUs, and IDUs (19.8%, 11.2% and 11.6% respectively, $p < 0.001$).

The factor analysis revealed three factors that we labeled basic needs, economic resources and services. The basic needs factor focused on fundamentals of human existence in the modern world: food, adequate shelter, clothing, and basic communication. The resources factor was essentially related to monetary resources, although two additional low-loading items (i.e., sleep and transportation) were also included. The services factor encompassed medical and dental care, along with public assistance. Many people did not have their basic needs met and even fewer had adequate monetary resources. Correlates of having adequate material resources included race/ethnicity, income level, income source, and recent homelessness.

Because NYC has an extensive public transportation system, we were surprised to find that almost one-third did not have dependable transportation. To further explore this, we assessed if this was a structural (lack of public transportation in the neighborhood of residence) or individual issue (not enough money for the subway, data not shown). Overall, 82.0% said that lack of transportation was not a problem in their neighborhood, 10.6% said it was somewhat of a problem and 7.4% said it was a big problem; 71.4% reported not being able use the subway because they did not have enough money. Compared to those who reported having dependable transportation at least half the time, those with dependable transportation less than half the time were more likely to lack money for the subway (85.5% vs. 68.8%, $p < 0.001$) and report lack of transportation was a big problem (13.3% vs. 6.2%, $p < 0.001$).

The modified FRS scale captures variability in material resources among disadvantaged populations in a way that traditional income measures cannot. The linear regression confidence intervals for the economic variables were relatively wide among those who reported incomes \leq \$5000/year and informal economy and illegal activities as their main

income source, demonstrating variability among this economically-disadvantaged population.

This study has several limitations that should be considered. We have a limited selection of items that measure material resources. For example an important, but unmeasured, variable in this population might be adequacy of resources to purchase drugs. The measures were subjective and we did not determine how monetary assets were allocated. In their study of 100 daily heroin users, Roddy and Greenwald (2009) reported that 72% of income was devoted to heroin; they did not find significant differences in expenditure patterns between non-IDUs and IDUs. There was minimal non-response bias for the legal and untaxed income variables (5.6% and 8.2%, respectively); however, both variables may have been subjected to recall bias. In particular, income from illegal activities may not be subject to detailed accounting and therefore the estimates are likely underestimated.

Despite these limitations, the modified 18-item FRS scale shows promise as an additional measure of poverty among low-income populations. Between 2008 and 2009, the U.S. poverty rate increased from 13.2% to 14.3%, which translates to approximately 43.6 million U.S. residents living in poverty (DeNavas-Walt et al., 2010). Based on self-reported legal income, the majority of our sample met the criteria for extreme poverty (approximately \$15 per day for a single person) as compared to 6.3% of the general U.S. population (DeNavas-Walt et al., 2010). The meaning of being poor and the impact that material deprivation could have on the ability to implement recommended health practices cannot be effectively understood if we rely solely on income-based poverty measures.

These data provide a different view of poverty, one that details some of the specific challenges faced by the communities in which we work. By moving beyond income and considering available material resources, we can begin to better understand the relations between poverty and health. The context of people's lives may not be supportive of implementing strategies to improve health. We need to address this with affected communities in the design and implementation of health interventions and programs. Further research is needed to determine whether variation in material deprivation among low-income communities is associated with risky health behaviors, morbidity and mortality. Specifically, future research should focus on whether and how material resources predict participation in, and adherence to, interventions like drug treatment as well as the role of material resources in recovery.

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Table 1

Demographic characteristics of 1593 Participants in the IMPACT Studies, New York City, 2005–2009

Characteristic	Number
Total sample	1593 (100.0)
Female sex	534 (33.5)
Age	
18 to 32	413 (25.9)
33 to 40	391 (24.5)
41 to 46	392 (24.6)
47 and older	397 (24.9)
Race	
Black	791 (49.7)
Hispanic	599 (37.6)
White	102 (6.4)
Other	101 (6.3)
Main income source	
Employment ^d	374 (23.8)
Public assistance	592 (37.6)
Informal economy ^b	48 (3.1)
Income from someone else ^c	193 (12.3)
Illegal activities ^d	367 (23.3)
Total legal income	
No income	258 (17.0)
Less than or equal to \$5,000	844 (55.5)
Less than or equal to \$10,000	290 (19.1)
Less than or equal to \$20,000	101 (6.6)
Less than or equal to \$30,000	12 (0.8)
Greater than \$30,000	17 (1.1)
Total untaxed income	
No income	495 (33.8)
Less than or equal to \$5,000	653 (44.6)
Less than or equal to \$10,000	186 (12.7)
Less than or equal to \$20,000	89 (6.1)
Less than or equal to \$30,000	25 (1.7)
Greater than \$30,000	15 (1.0)
Marital status:	
Single, never married	1039 (65.7)
Married, living as married	287 (18.1)
Divorced/Separated/Widowed/Other	256 (16.2)
> 2 people live in house/apt	574 (46.5)
Financially support someone age < 18	450 (28.3)
Have children	1035 (65.1)

Characteristic	Number
Homosexual, gay, lesbian, or bisexual identity	192 (12.1)
Homeless in past 6 months	639 (40.1)
Drug use:	
Non-drug user	216 (13.6)
Former drug user	345 (21.5)
Current drug users	1034 (64.9)
<i>Non-injection drug user</i>	634 (39.8)
<i>Injection drug user</i>	400 (25.1)

^aRegular job, own business, or temporary work

^bRecycling cans, returning bottles for deposits, windshield wiping, or panhandling for money

^cParent, friend, relative, or spouse's income

^dTheft, robbing, stealing, conning, selling drugs, sex for money

Table 2Factor Analysis of the Material Resource Scale^a

Needs adequately met:	Factor loadings		
	<u>Factor 1</u>	<u>Factor 2</u>	<u>Factor 3</u>
	Basic needs	Economic Resources	Services
Food for 2 meals per day	0.474	0.222	0.048
House or apartment	0.834	0.072	-0.098
Money to buy necessities	0.339	0.565	-0.036
Enough clothes for you/family	0.441	0.386	0.051
Heat for house/apartment	0.977	-0.187	0.032
Indoor plumbing/water	1.025	-0.267	0.068
Money to pay monthly bills	0.471	0.423	0.012
Good job for self/spouse	0.113	0.657	-0.260
Medical care for self/family	0.042	0.092	0.861
Public assistance	-0.025	-0.176	0.773
Dependable transport	0.161	0.384	0.295
Time to get enough sleep/rest	0.181	0.339	0.198
Furniture for home/apartment	0.718	0.204	0.009
Phone/access to phone	0.386	0.282	0.107
Dental care for self/family	0.046	0.154	0.740
Money buy things for self	-0.145	0.917	0.164
Money for entertainment	-0.181	0.977	0.066
Money for savings	-0.128	0.899	-0.067
Reliability statistics			
Coefficient α	0.88	0.85	0.74
ω_h	0.81	0.79	0.70

^a18 items from the 30-item Family Resource Scale (Dunst and Leet, 1987)

Table 3

Criterion Validity: Mean Material Resource Scale Item Scores by Main Income Source^a

Needs adequately met:	Main income source					
	Employment ^b Mean (SD)	Public assistance Mean (SD)	Informal economy ^c Mean (SD)	Income from someone else ^d Mean (SD)	Illegal activities ^e Mean (SD)	
Food for 2 meals per day	4.25 (1.3)	4.10 (1.3)	3.67 (1.7)	4.03 (1.5)	3.77 (1.5)	
House or apartment	4.06 (1.7)	3.95 (1.8)	2.92 (2.1)	3.78 (1.9)	3.22 (2.1)	
Money to buy necessities	3.60 (1.4)	3.24 (1.5)	2.58 (1.4)	3.32 (1.6)	2.85 (1.6)	
Enough clothes for you/family	4.15 (1.3)	3.81 (1.5)	3.40 (1.7)	3.94 (1.6)	3.50 (1.7)	
Heat for house/apartment	3.98 (1.7)	4.0 (1.7)	3.25 (2.1)	4.09 (1.6)	3.40 (2.0)	
Indoor plumbing/water	4.27 (1.6)	4.34 (1.5)	3.60 (2.0)	4.38 (1.5)	3.77 (1.9)	
Money to pay monthly bills	3.56 (1.7)	3.40 (1.7)	2.48 (1.9)	3.29 (1.8)	2.80 (1.9)	
Good job for self/spouse	2.55 (1.9)	1.46 (1.8)	1.33 (1.7)	1.84 (1.9)	1.59 (1.8)	
Medical care for self/family	3.81 (1.8)	4.36 (1.3)	3.71 (1.8)	3.95 (1.7)	3.76 (1.8)	
Public assistance	2.61 (2.1)	4.08 (1.6)	3.23 (2.1)	3.24 (2.0)	3.07 (2.0)	
Dependable transport	3.59 (1.8)	3.53 (1.9)	3.06 (2.1)	3.31 (1.9)	2.85 (2.0)	
Time to get enough sleep/rest	3.37 (1.6)	3.29 (1.7)	3.02 (1.9)	3.34 (1.7)	2.88 (1.8)	
Furniture for home/apartment	3.86 (1.8)	3.60 (1.9)	2.94 (2.2)	3.74 (1.9)	3.03 (2.1)	
Phone/access to phone	3.82 (1.7)	3.68 (1.9)	3.06 (2.0)	3.93 (1.7)	3.10 (2.1)	
Dental care for self/family	3.68 (1.8)	4.08 (1.6)	3.38 (2.0)	3.82 (1.8)	3.51 (1.9)	
Money buy things for self	3.20 (1.6)	2.89 (1.6)	2.54 (1.7)	2.94 (1.7)	2.52 (1.7)	
Money for entertainment	2.76 (1.8)	2.27 (1.7)	2.06 (1.9)	2.44 (1.8)	2.10 (1.8)	
Money for savings	2.02 (1.8)	1.44 (1.7)	1.25 (1.8)	1.72 (1.8)	1.23 (1.6)	
Mean scale scores	63.1 (19.1)	61.5 (18.3)	51.5 (20.6)	61.1 (19.3)	52.9 (21.3)	

^a All associations were $p < 0.001$ ^b Regular job, own business, or temporary work^c Recycling cans, returning bottles for deposits, windshield wiping, or panhandling for money^d Parent, friend, relative, or spouse's income^e Theft, robbing, stealing, conning, selling drugs, sex for money

Table 4

Crude and Adjusted Linear Regression Models for the Material Resource Scale Score

Characteristics	Regression coefficient for material resource scale score			
	β_{crude}	95% CI	β_{adjusted}	95% CI
Constant	59.58	58.60, 60.56	73.06	70.07, 76.05
Female Sex	2.03	-0.04, 4.10		
Homosexual, gay, lesbian, or bisexual identity	0.28	-2.72, 3.28		
Age				
18 to 32	referent			
33 to 40	-1.88	-4.62, 0.86		
41 to 46	2.16	-0.58, 4.90		
47 and older	3.74	1.01, 6.47		
Race				
Black	referent		referent	
Hispanic	-7.17	-9.25, -5.09	-3.44	-5.53, -1.35
White	-7.09	-11.1, -3.04	-2.24	-6.13, 1.64
Other	-3.79	-7.86, 0.27	-0.61	-4.41, 3.20
Main income source				
Employment ^a	referent		referent	
Public assistance	-1.65	-4.17, 0.87	-1.09	-3.50, 1.32
Informal economy ^b	-11.66	-17.5, -5.82	-3.70	-9.26, 1.87
Income from someone else ^c	-2.06	-5.43, 1.32	-0.73	-3.94, 2.47
Illegal activities ^d	-10.22	-13.0, -7.42	-3.10	-5.97, -0.24
Total legal income \leq \$5000/year	-7.91	-10.12, -5.69	-3.06	-5.20, -0.92
Total untaxed income \leq \$5000/year	1.53	-0.98, 4.04		
Marital status:				
Single, never married	referent			
Married, living as married	2.07	-0.53, 4.67		
Divorced/Separated/Widowed/Other	0.84	-1.88, 3.57		
> 2 people live in house/apt	-0.95	-2.99, 1.08		
Financially support someone age < 18	3.77	1.60, 5.93		

Characteristics	Regression coefficient for material resource scale score		
	β_{crude}	95% CI	95% CI
Have children	0.80	-1.26, 2.85	
Homeless in past 6 months	-16.75	-18.56, -14.93	-14.28, -16.24, -12.31
Drug use:			
Non-drug user	referent		referent
Former drug user	-3.39	-6.68, -0.11	-1.67, -4.88, 1.54
Non-injection drug user	-6.47	-9.45, -3.49	-1.98, -4.91, 0.95
Injection drug user	-14.76	-17.96, -11.57	-6.85, -10.27, -3.43

^aRegular job, own business, or temporary work

^bRecycling cans, returning bottles for deposits, windshield wiping, or panhandling for money

^cParent, friend, relative, or spouse's income

^dTheft, robbing, stealing, conning, selling drugs, sex for money

Table 5
Construct Validity: Mean Material Resource Scale Item Scores by Drug Use Status

Needs adequately met:	Drug user status			
	NDU	FDU	Non-IDU	IDU
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Food for 2 meals per day	4.24 (1.3)	4.26 (1.2)	4.10 (1.3)	3.66 (1.6)
House or apartment	4.28 (1.5)	3.98 (1.8)	3.79 (1.9)	3.21 (2.1)
Money to buy necessities	3.65 (1.5)	3.43 (1.5)	3.27 (1.5)	2.75 (1.6)
Enough clothes for you/family	4.07 (1.4)	3.98 (1.5)	3.87 (1.5)	3.47 (1.7)
Heat for house/apartment	4.15 (1.6)	4.00 (1.6)	3.98 (1.7)	3.33 (2.0)
Indoor plumbing/water	4.47 (1.3)	4.34 (1.5)	4.24 (1.6)	2.78 (1.9)
Money to pay monthly bills	3.81 (1.6)	3.54 (1.7)	3.24 (1.8)	2.76 (1.9)
Good job for self/spouse	2.52 (2.0)	1.85 (1.9)	1.74 (1.9)	1.46 (1.7)
Medical care for self/family	4.05 (1.6)	4.39 (1.3)	4.05 (1.6)	3.64 (1.8)
Public assistance	2.98 (2.2)	3.80 (1.8)	3.38 (2.0)	3.17 (2.0)
Dependable transport	3.80 (1.7)	3.57 (1.8)	3.42 (1.9)	2.81 (2.0)
Time to get enough sleep/rest	3.56 (1.6)	3.27 (1.6)	3.27 (1.7)	2.88 (1.8)
Furniture for home/apartment	4.16 (1.6)	3.80 (1.9)	3.55 (1.9)	2.89 (2.1)
Phone/access to phone	4.17 (1.6)	3.94 (1.7)	3.59 (1.9)	2.97 (2.0)
Dental care for self/family	3.88 (1.8)	4.01 (1.6)	3.86 (1.8)	3.49 (1.9)
Money buy things for self	3.36 (1.6)	3.06 (1.6)	2.89 (1.6)	2.45 (1.6)
Money for entertainment	3.03 (1.8)	2.34 (1.8)	2.39 (1.8)	1.99 (1.7)
Money for savings	2.44 (1.9)	1.61 (1.8)	1.50 (1.7)	1.15 (1.5)
Mean scale scores	66.6 (17.9)	63.2 (18.0)	60.1 (19.0)	51.8 (21.4)