# Predicting Hunger and Overcrowding: How Much Difference Does Income Make?

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## POLICY SUMMARY

Using data from a telephone survey of AFDC recipients in California, this study shows that income, even when adjusted for household needs, is a poor predictor of a family's risks of experiencing hunger or overcrowding. Including food stamp income in the family's measured income does not increase the likelihood of correctly identifying hungry families The poverty thresholds systematically underestimate the expenses incurred by certain types of families (those with teenage boys, for example). A family's risk of experiencing hunger also goes up dramatically if their financial situation has recently worsened. Families seem to cut back on food consumption before they reduce certain other expenditures, such as housing expenditures. Hunger and crowding can and should be measured directly using survey questions. They cannot be inferred accurately from data about income poverty.

Hunger and crowding are quite common among this sample of low-income respondents. One-third of families with male teenagers and nearly 20% of families with preschoolers were hungry "sometimes" or "often". One-third of respondents had more than two people per bedroom living in their homes. The prevalence of these conditions suggests that even in California, where the AFDC grant was relatively high at the time of the survey, AFDC and food stamps are not adequate to prevent widespread hardship among recipients.

## ABSTRACT

A survey of AFDC recipients in California shows that income, even when adjusted for household need and augmented by the food stamp grant, poorly predicts hunger or overcrowding among respondents. Families with teenage boys report hunger much more often than their incomes would predict, as do families whose finances have recently deteriorated. Families seem to cut back on food consumption before housing.

One-third of families with male teenagers and nearly 20% of families with preschoolers were hungry "sometimes" or "often". One-third of households had more than two people per bedroom. These conditions cannot be inferred accurately from data about income but they can be measured directly using surveys.

# 1. INTRODUCTION

If we want to know how many people in the United States have an inadequate standard of living we can conduct a survey to find out. But what questions should we ask? The approach in the United States has been to ask about income. A family is determined to be in poverty if its yearly cash income is less than the "poverty threshold": an expert estimate of what it would cost a family of that size to achieve a minimally adequate standard of living. Federal statistical agencies routinely conduct surveys of family incomes and use them to compute poverty rates. Partly for lack of any better data, these income and poverty statistics are used to infer the extent of material hardship—hunger, inadequate housing, and so forth—experienced by the population.

The main purpose of this study is to show that a discrepancy exists between the picture of poverty we get from survey data about consumption and the picture of material hardship implied by survey data about income. These limitations of poverty statistics have been noted elsewhere; a study somewhat like this one looking at low-income Chicago residents drew similar conclusions (Mayer and Jencks, 1989). The relative merits of consumption-based and income-based approaches to the measurement of poverty have been debated for years (Ruggles, 1990). Like Mayer and Jencks (1989), we focus here not on consumption in general but on measures of inadequate consumption: in our case, hunger and overcrowding.

The discrepancies we identify between official poverty status and actual material hardship can be traced in part to problems in the poverty thresholds, which systematically underestimate the expenses incurred by certain types of families (those with teenage boys, for example). The discrepancies are due as well to individual circumstances that increase or decrease the risk of

hardship. Certain key experiences, such as a deteriorating financial situation, put people at high risk for hunger. Other situations, such as doubling up with another family, put them at risk for overcrowding. Some traits, such as speaking Spanish rather than English, or having recently moved houses, increase the risk both of hunger and of overcrowding.

These discrepancies have several implications for policy-makers. First, they suggest that while we know how many people overall are "officially poor", we do not know from the poverty statistics how many people lack basic necessities—are hungry, for example. If policy-makers want to know how many people are actually hungry or inadequately housed they would do better to ask such questions directly rather than make inferences from income data. Second, the federal poverty statistics may give seriously inaccurate portraits of need among subgroups of particular policy interest, such as non-English speakers, or families with adolescents. These subgroups have considerably higher rates of material hardship than the population as a whole, much higher than would be predicted by their incomes. Information about subgroups is often more interesting to policy-makers than aggregate estimates of poverty (Palmer, Smeeding and Torrey, 1988).

The next section of the paper outlines some limitations of the current method of assessing poverty in the United States. Following is an outline of the conceptual framework of the study. Section 4 presents the data, Section 5 the analysis and results, and Section 6 discusses the findings and concludes.

## 2. Background

There are several problems with using the federal poverty thresholds as guides to the actual living standards of the population. First, a family's poverty status is assessed for the purposes of federal statistics on its gross cash income. Taxes and other payroll costs are not deducted from income, and the cash subsidy available from the Earned Income Tax Credit is not added in. Non-cash benefits, even Food Stamps, are not included as income. Thus, gross cash income does not correspond to the family's inflow of disposable cash and near-cash resources, nor to their supply of non-cash goods.

Second, poverty status is computed as a function of income received over a year. Empirical studies have shown that estimates of the size of the poverty population are quite sensitive to the accounting period chosen; using a shorter period generally yields larger numbers of poor people (Ruggles, 1990; Rainwater, 1981; Hill, 1981; Duncan, 1984). Families with annual incomes that are above the poverty line may still be unable to afford basic necessities such as rent or food for several months if their incomes suddenly drop, perhaps as a result of unemployment or illness. These families will not be counted among the poor even though they may experience serious hardship.

Conversely, some families may have poverty-level incomes for a year or longer because they want to travel, study or start a business instead of working at a steady job. Such choices often indicate people with relatively high lifetime incomes who are unlikely to suffer severe hardship. Even so, they are counted among the officially poor.

Third, poverty status is calculated for families or households, not for individuals. Individuals living in families with incomes above poverty are presumed to share resources so that everybody's basic needs are covered. In fact, some members might control the family income and spend it primarily on themselves, leaving other members hungry or otherwise in need.

Finally, the actual levels of the poverty thresholds have been criticized on many different grounds. The existing poverty thresholds are based on an "absolute" measure of poverty dating from 1967 that has been indexed for year-to-year changes in prices, but not for changes in consumption patterns nor for the overall increase in the country's standard of living. Surveys that have asked the public to estimate "what it costs to make ends meet", as well as normative budgets for low-income households computed from the itemized costs of a market-basket of necessities, imply that the poverty thresholds should be substantially higher than those currently in use (Danziger et al., 1984; Ruggles, 1990).

Poverty thresholds rise with family size—a 3-person family, for example, is estimated to need 57% more money to live than a single individual—and vary with the number of children in the family and by whether the householder is elderly. With these exceptions, the poverty lines do not vary according to the ages and genders of family members. However, individuals of different ages and genders probably have different average costs for "basic needs". Table 1 illustrates the point for food. It reports individual food needs estimated as recommended caloric intake (upper and lower bounds) from The Handbook of Clinical Nutrition (Weinsier, Heimburger and Butterworth, 1989) and as "Cost of Food" budgets under USDA's "Thrifty" and "Moderate Cost" plans. Young men aged 15-18 have the highest caloric needs and the largest estimated food budgets. Their food needs are about double

the needs of the smallest consumers, children aged 1-2, (the smallest differential is estimated under the Thrifty Food Plan, while the largest differential is suggested by the caloric expenditure data).

[Table 1 about here.]

Several other costs apart from food are probably also lower for young children: they can more easily share bedrooms, and they do not usually have expensive tastes in clothes. It is true that they have needs adolescents do not, such as for diapers and for continuous supervision, and these can be costly. But on balance, preschoolers probably cost their parents less than adolescents do, in which case the poverty thresholds most likely underestimate the needs of households with teenagers (especially teenage boys) in them and overestimate the needs of households with very young children.

## 3. Conceptual framework

The conceptual framework for the study is quite straightforward. A family will lack basic necessities if it cannot pay for or otherwise acquire them; we will refer to such families as "needy". One of the needs that may not be met is food, in which case family members go hungry; another is housing, in which case they are homeless or crowded into too few rooms. Hunger and overcrowding present interesting contrasts as measures of neediness. Spending on food can be readily modified in response to a shortage of resources, while housing arrangements are usually fixed in the short term.

The probability of neediness is a negative function of income and other resources and a positive function of the family's costs for necessities.

(1) $\text{Odds of N} = \text{alpha} + \text{Beta1 LN Y1} + \text{Beta2 LN C}_i$

where LN Y1 is the natural log of cash income, LN $C_i$ is the logged value of a vector of costs, N is a dichotomous variable indicating whether the family was needy (hungry or not, or overcrowded or not), and Beta1 and Beta2 are hypothesized to be negative and positive, respectively.

If, in order to identify needy families, we rely on the family's income expressed as a percentage of the poverty threshold, we are implicitly assuming a more restrictive model:

(2) Odds of N = alpha + Beta1 (Y1/ ^C1)

where ^C1 is the family's estimated total costs for necessities. These estimated costs are the poverty threshold for that family. In a logistic regression framework, this equation can be re-expressed as:

(3) LN (Odds of N) = alpha + Beta1 LN Y1 - Beta1 LN ^C1.

Some of the criticisms of the current poverty threshold method of identifying needy families can be formally tested within this framework.

First, we can ask whether the poverty thresholds are accurate deflators for nominal income. An accurate deflator in this context will generate similar estimated risks of hunger for families with similar poverty ratios, whether their nominal incomes are high or low. One test of the accuracy of the poverty thresholds in this sense is to see whether equation (1) collapses to equation (3): that is, whether the coefficients Beta1 and Beta2 do not significantly differ (except in sign).

Second, failing to take a family's disposable income and non-cash resources into account may lead to inaccuracy in identifying needy families. Current policy proposals focus on possible improvements to the income measure, such as including the value of the Food Stamp grant; we test whether this more expansive definition of income improves our ability to identify needy families.

Third, if (as Table 1 suggests) adolescent males cost more than preschoolers to support, then the poverty thresholds will underestimate the needs of families with adolescent males and relatively overestimate the needs of families with preschoolers. Again, we test this hypothesis, which highlights one way in which the poverty thresholds may misrepresent the true costs of necessities.

Fourth, one criticism of the current thresholds is that they do not take adequate account of housing costs, which comprise a larger fraction of household budgets than in the past. In many urban areas, housing costs may consume half or more of a low-income family's income. Rent may be a budget item that crowds out expenditures on other goods, especially food, leaving families at risk for hunger. Equally, families facing high rents (per room) will probably crowd more people into a smaller space to keep costs down. High rent might reflect a rental choice that provides safety, good schooling or other amenities, or a lack of search time and personal connections to find a good deal where inexpensive housing is in short supply. The analyses explore the extent to which higher spending on rent predicts more hunger or less over-crowding.

Finally, we step back from questions about the poverty threshold specifically to estimate general models of hunger and overcrowding. Ethnographic studies have documented that many low-income families are helped by friends and kin when they run out of food (see e.g. Stack, 1978; Rank, 1993). Respondents sharing housing with other adults or families may have greater access to practical support, goods and money from others than do families living alone, but they are more likely to live in crowded conditions. Some people live close to food pantries and can get free food from them. More generally, families who have lived in the same place for a long time are more likely to have established networks to help them through hard times. Indeed, such families may have resisted moving because of the support networks they have established. They may also have not moved because their housing is adequate and they are not crowded.

Skills in budgeting, shopping and food preparation are likely to be important predictors of hunger. It is very difficult to provide enough food for a family on a very low budget. Constant vigilance and determination are needed; information is crucial, as are forethought and careful organization. Formal education may not be much use in these tasks, but proficiency in English probably is. Drops in income, especially if they are unanticipated or not expected to last, may lead to hunger if families scrimp on food rather than make major changes in their other expenditures at short notice. Expenditures such as cable TV, magazine subscriptions, church contributions or occasional treats for children may be maintained because abandoning them signals a downward slide in the family's standard of living. Stopping "layaway" purchase agreements can mean losing money already put down. Probably most important, the California urban housing market is costly and often requires large down-payments to move to a new place. If families cannot readily move

to cheaper lodgings, declines in income may show up as a shortage of disposable income to spend on food, accompanied by relatively high spending on rent.

## 4. Data and methods

The data are drawn from a telephone interview survey, conducted in English or Spanish, of 2214 adults who, in December 1992, were receiving AFDC and residing in Los Angeles, San Bernardino, Alameda or San Joaquin counties. These counties account for about 60% of all AFDC cases in the state (some 40% live in Los Angeles County alone, which provided twice as many cases as each of the other counties). These four counties also account for about 10% of all AFDC cases nationwide. In these analyses the data are weighted to represent numerically the population on AFDC in the four counties as of December 1994.[1]

A roster of the ages and genders of all adults and children living in the household was recorded. Additionally, respondents were asked their marital status, and if they said they were unmarried, were asked: "Are you currently living with someone in a marriage-like relationship but not legally married?". The AFDC family headed by the respondent (which is the focus of this study) includes the respondent, her[2] spouse or partner (if she had one), her biological and step children under age 20, and any other children counted as dependents in her AFDC grant. Other household members were not part of her family.

This study uses two dependent variables: hunger and crowding. "Hunger" existed if the respondent, her children, or her spouse had ever in the previous twelve months not had enough to eat because there was not enough money to buy food.[3] Follow-up questions established the

frequency of hunger ("only rarely", "sometimes", and "often"). A family's frequency of hunger is the more frequent of the levels reported for children and parents.

"Crowding" (our term for overcrowding) is defined as more than two household residents per bedroom. This definition reflects the Department of Housing and Urban Development's standards, which define overcrowding as more than four people in a two-bedroom dwelling. Thus a family of three in a one-bedroom apartment is "crowded", but a mother and child in that apartment is not.

The income data recorded for the recipient's family reflect her own and her partner's or spouse's income. Respondents were asked whether they or their spouse or partner received income from earnings, AFDC, SSI, Unemployment Insurance, child support, or relatives or friends, and if they did, how much.[4] Respondents were not asked the incomes of children in their families (which would generally have been negligible since almost all their children were under age 16), nor the incomes of other members of their households, nor how much each adult in the household contributed to help cover joint expenses. The total monthly incomes reported for a few respondents were implausibly high or low (recall that all respondents were receiving AFDC at the interview date), so cases with the highest and lowest 2% of reported incomes were dropped from the sample, leaving a range of incomes from $300 to $2342.

## 5. Analysis and Results

### *A. Characteristics of the sample*

[Table 2 about here. ]

As Table 2 indicates, more than one-third of respondents' families had been hungry in the preceding year, and more than one-third were living in crowded conditions. A majority (58%) of families had either experienced hunger or were overcrowded, and 13% suffered from both problems. Most (60%) had incomes between 50% and 75% of the poverty threshold; 13% were not officially poor, and 14% were in "deep" poverty, with incomes below 50% of the poverty threshold.

The typical family in the sample had two children, one a preschooler and the other in elementary school. Only a minority of households had youngsters going through the growth spurts of adolescence; 20% of families included an adolescent boy, and 15% had an adolescent girl ("adolescent" here is age 14 to 19). Half the sample were Latino and 31% African American. Over one in four (26%) spoke Spanish as a first language. Nearly half had not graduated from high school.

Contrary to many stereotypes, only half (52%) of our respondents were single parents living on their own with their children. A few (8%) were Unemployed Parent cases with two or more adults officially recognized as on the AFDC case. The remaining 41% of households were FG (single-parent) cases where the respondent lived with another adult or adults. About a third of these shared living arrangements (13% of the sample) appear to be doubling up with other

families—that is, the respondent and her child or children were living with other children and adults. Some of these respondents were living with their own parents and siblings (the small number of teenage respondents—3% of the sample—were almost all in this situation). A larger number, 20% of the sample, were living with an adult man and no unrelated children. About half of these respondents were married or "living in a marriage-type relationship", even though they were FG cases and therefore officially single parents.[5] The rest may also have been cohabitations, but equally could have been shared housing with male relatives, friends, or in-laws. Finally, a smaller fraction of respondents were living with other adult women—mothers, sisters, friends, or others—and no men or children.

### *B. Poverty status as a Predictor of Hunger and Crowding*

[Table 3 about here.]

The association of poverty with hunger and crowding is unmistakable (Table 3). Half of families in deep poverty had gone hungry, 64% were living in crowded conditions and one-third had both problems. In contrast, one-quarter of non-poor families were hungry and fewer yet were crowded. Even so, some of the poorest families managed to escape both crowding and hunger while nearly half of non-poor families experienced one or the other problem.

To what extent do these inconsistencies arise because the official method of assessing poverty status based on income excludes in-kind transfers and generates inaccurate estimates of the costs incurred by households with children of varying ages? These questions are investigated

in Table 4, which presents the results of three pairs of logistic regression models to predict hunger and crowding.

[Table 4 about here.]

Model 1 shows how well cash income and the family's costs as estimated by the poverty standard (both logged) perform as predictors. Both variables are highly significant in both models, and the coefficients on "Gross cash income" and "Poverty standard for family" do not differ significantly from each other in absolute magnitude in the Hunger model. The poverty standards evidently are set so that families with similar income-to-needs ratios do have similar risks of hunger whatever their nominal incomes. The same cannot be said about risks of crowding: families with higher estimated costs for basic needs are much more likely to experience crowding than families with lower costs, even if their incomes are correspondingly higher. These results suggest that the poverty thresholds understate the cost of housing larger families. ]

Overall, the models do not perform well as predictors of material deprivation. Only 3% of the hungry families are correctly predicted by the model (the variables predict crowding somewhat better). The limitations of any effort to assess material hardship using only cash income and the poverty thresholds are apparent in these results.

Model 2 experiments with a more comprehensive measure of income by adding the (logged) value of the Food Stamp grant and a variable showing whether the family receives assistance under the Women Infant Children Nutrition Program. Somewhat surprisingly, a higher food stamp grant predicts less crowding but not significantly less hunger. The positive association

of crowding with WIC, which is offered as a priority to postpartum women and their infants and is not always available to families with slightly older children, may capture the high probability that infants sleep in the same room as their mothers. In sum, Model 2 is a statistically significant improvement over Model 1, but provides little substantive improvement in identifying needy families accurately. The problems of the poverty threshold approach as a way to assess hardship will not be solved by simply augmenting the income calculations to include the value of the food stamp grant.

The third model tests whether adding details of the ages and numbers of children in the family improves on the information about costs already included in the poverty threshold. The answer is yes: risks of hunger are exceptionally high among families with adolescent boys and lower than average in families with only young children. The crude averaging of per-person costs that generates the poverty thresholds leads to underestimates of hunger among big eaters. Adding the information about household composition improves the predictive power of the model for hunger quite a bit. Using it, 19% (instead of 3%) of hungry families were correctly identified.

The picture of crowding also changes when children's ages are included. Crowding is significantly more likely with young than older children. (It may also be true that crowding is slightly less troubling to the family when children are preschoolers than when they are adolescents.) Receipt of WIC continues to predict crowding, probably because infants are on the program more than preschoolers are, and infants often sleep with their mothers. This result and the ones for hunger are completely consistent with the hypotheses outlined earlier.

So far, we have been testing only models that could perhaps be used to generate improvements in what we are calling the "poverty threshold approach" to measuring hardship. Would we do better if we had more precise estimates of costs and a more complete accounting of income? The answer seems to be no, not really. Even with the best model (Model 3) our predictions miss 81% of the families who experienced hunger, and of the hungry families we claim to find, 42% are not in fact hungry. Our predictions for crowding are also inaccurate, although less so.

We turn now to a more complete model of hardship which incorporates factors that could not plausibly be built into a "poverty threshold approach". The purpose here is to demonstrate that hunger and crowding are not random occurrences and are not being reported randomly in this survey. Rather, they are strongly related to some of the systematic factors discussed earlier: deteriorating financial status; the unmeasured (and probably unmeasurable) income sources available to the respondent; language ability; and long-term tenure in one place. They are also related to rent, although not in the ways hypothesized.

### C. *A Full Model for Hunger and for Crowding*

Table 5 reports the results for a model that incorporates all the variables on income and family composition already discussed, plus information on rent, changes in financial status, household arrangements, language, ethnicity, race, education, access to food banks and tenure in current home.

Adding rent (per bedroom) to the model does not improve our ability to identify hungry families, but it does predict crowding. As the price of housing goes up, families consume less of it. And as the number of people in the family and in the household increases, crowding does too. With these variables included, income and poverty status no longer predict crowding.

These latter variables do continue to strongly predict hunger, as does having adolescent boys in the family. However, the single strongest predictor of hunger is downward mobility. The likelihood of hunger was dramatically higher for families who said they had become "worse off" economically since the year before; over half (54%) of this group reported experiencing hunger (in bivariate analyses). One-third were hungry "sometimes" or even "often". These risks of hunger are more than double the rates for families whose financial situation had not recently worsened.

The relationship between worsened finances and hunger is not simply a restatement of the observation that poorer families are hungrier, a point made clear in these regressions by the statistically significant coefficient on income. In fact, families whose finances had worsened in the preceding year had similar incomes (relative to needs) as families who were doing "the same" as the year before.[6] Moreover, the effect of a change in finances swamped the effect of level of income. Families with above-average incomes but who were "worse off" were considerably more likely to experience hunger than families with below-average incomes and unchanged or improved fortunes (the risks were 48% hungry in the former group and 33% in the latter group). Crowding, in contrast, was completely unrelated to changes in finances. These results suggest

that people do, indeed, reduce their food consumption before they curtail their housing (and, perhaps, their other expenditures).

Race, ethnicity and language are all associated with hardship. Latinos and African Americans are crowded more often than average. Spanish-speaking Latino families are exceptionally crowded even when their tendencies to have more children and to share housing are controlled for. Spanish speakers are also at above-average risk for hunger.

In contrast, families that have lived for a long time at the same address are at low risks for hunger and crowding. The causal relationships here almost certainly run in both directions, with families staying put if they are in adequate housing and have developed skills to help avoid hunger.

Whether respondents share housing, either with a male partner or with another woman or a family, also determines whether they are likely to experience hunger. As we noted above, additional adults in the household may bring in resources to the family that are not captured in the income accounting of the survey. Even if these other adults are related to the respondent, if they are not part of the family that the respondent is heading, their incomes are not counted either for AFDC purposes or in the survey's computation of family income. They may be roommates who pay a portion of the rent. They may be friends or boyfriends who buy groceries or gifts for the children. They may be a mother or aunt in whose house the respondent is living and with whom she shares some expenses.

As Table 5 shows, a respondent's risks of hunger are very much reduced if she is coresiding with a childless man. Why "extra" men, and not "extra" women, should protect single-parent AFDC families from hunger probably has to do with their reasons for cohabiting. Most childless men who choose to live with single mothers on welfare are probably doing so because they are friends or lovers with the woman, and are in a position to contribute materially to her and her children. Indeed, many women might not be willing to live with a man who contributed nothing. The men may pay some bills or sometimes buy groceries, even if the respondent does not have any recognized claims on their incomes.

In contrast, many of the childless women living with AFDC recipients are likely to be female relatives whose contributions to the family consist either in sharing their own homes with the respondent or in providing childcare. It is also possible that they themselves needed a home or needed to be taken care of.

None of these possible transfers or exchanges show up in the family's income statistics, yet they greatly alter the distribution of material hardship among families. The income-to-needs ratios of the various household arrangements controlled for in Table 5 are virtually identical (except that the UP families are slightly poorer than average) yet their risks of hunger and crowding vary considerably.

The expanded model of Table 5 predicts hunger and crowding far better than any of the earlier more restrictive models. We are able to correctly identify 43% of hungry respondents and

68% of crowded respondents. Furthermore, a majority of the people we identify as hungry or crowded in fact are: 63% of the former and 76% of the latter.

## CONCLUSIONS

Clear differences exist between families that are hungry or crowded and those that are not, and income and poverty status are only two of those differences. By themselves, those two variables are poor predictors of hunger or overcrowding. Poverty status does not tell us accurately who is suffering serious hardship, at least among this sample of California AFDC recipients. If poverty status is not an accurate metric for this group of people there seems no reason to think it would be accurate for other groups either, or for the population as a whole.

Accounting for non-cash benefits such as food stamps and WIC and adjusting for family composition do not greatly improve our ability to predict who, or how many, are hungry or overcrowded. The factors that are the most important predictors do not appear in most surveys: whether the family has experienced a decline in income, whether it includes teenage boys, whether the respondent is cohabiting and whether she has doubled-up with another family.

The most straightforward way to determine how many people experience hunger regularly in this country, or live in crowded conditions, is to ask them directly. Plans are under way to do exactly that for hunger, on a national basis, in the Current Population Survey. Those data should be far more useful than any attempts to infer deprivation based on poverty status.

Certainly among adults and children dependent on AFDC, hunger and overcrowding are widespread. The California AFDC program is more generous than AFDC programs in most other

states, yet even here more than half of AFDC families reported being hungry or overcrowded. One-third of families with male teenagers and nearly 20% of families with preschoolers were hungry "sometimes" or "often". Among the former group, hunger can aggravate behavioral difficulties (Sanchez-Jankowski, 1991), while for young children the irreversible neurological, physiological and cognitive consequences are well-established (Miller and Korenman, 1994). Perhaps with a national data-gathering strategy to document the prevalence, causes, and outcomes of hunger and overcrowding, a focused policy strategy to address these problems will follow

## Notes

1. The actual sample of interviews analyzed here over-represents people with long durations on AFDC and with stable tenure in one region and in one home, for several reasons. First, only 56% of the original sample drawn from the 1992 AFDC rolls was successfully located and interviewed. Some of the attrition was due to disruptions during Los Angeles' natural disasters of 1993-94 (earthquake, flood and fire), which forced many recipients and some local AFDC offices to relocate. Attrition is also more likely among recipients who have moved, especially out of the county, or who have left the AFDC rolls. Respondents who when located for interview were no longer on AFDC or no longer in the four counties are not included in the sample analyzed here. (They represent about 400 of the sample of 2214 interviews.)

The sample was split evenly between people subject to AFDC policies prevailing prior to program changes made in 1993, and people receiving AFDC under the new policies. This distinction is not important for the present study. The sample also over-represented UP ("Unemployed Parent") cases, which was corrected for in the weighting.

2. Among the FG ("Family Group", or single-parent) AFDC cases 98% of the respondents were women. Among UP cases most respondents were women too, and virtually all were partnered.

3, Respondents were asked "Was there ever a time in the last 12 months when you felt your child(ren) did not get enough to eat?" and then (if yes), "Was that because there wasn't enough

money to buy food or because of some other reason?" They were asked the same sequence about "you [and SPOUSE if applicable]."

4. Some respondents may have under-reported their incomes or concealed the fact that they were cohabiting for fear that the truth would jeopardize their eligibility for AFDC (although the interviewers assured respondents of the confidentiality of their answers). This caveat probably applies to all efforts to gather accurate income data from groups of people receiving means-tested benefits.

5. A man's presence in an FG household, and his income, will generally not be reported to the AFDC caseworkers. Such non-reporting is not necessarily fraudulent on the respondent's part; she is entitled under AFDC rules to have a roommate and to share rent, utilities and other household expenses with him (or her). Only if the man were explicitly acknowledged as "supporting" the respondent or her children would his income be counted in determining the respondent's eligibility for AFDC. If the coresiding couple were married and the man had income, of course he would be assumed to be contributing to the respondent's support, and her AFDC grant would probably be greatly reduced, if not terminated.

6. The reason for being "financially worse off" was not asked. The fact that this status does not correlate completely with level of income suggests that it sometimes refers to changes other than a decline in income, such as increased costs (in rent, for example), reduced support from family or friends, or the departure of a lover or roommate.

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**Table 1**

**Comparisons of estimates for "needs" of individuals defined by sex and age**

| Type of individual: | Caloric need: daily lower bound | Caloric need: daily upper bound | "Thrifty" food cost monthly (July 1992) | "Moderate" food cost monthly (July 1992) | Increment to the 1992 poverty threshold for 4-person family (approxi |
|---|---|---|---|---|---|
| Adult man age 20-50 | 2300 | 3100 | 101.70 | 161.60 | 266.67 |
| Adult woman age 20-50 | 1600 | 2400 | 91.50 | 137.60 | 266.67 |
| Child age 1-2 | 900 | 1800 | 56.40 | 79.60 | 250.00 |
| Child age 3-5 | 1300 | 2300 | 60.60 | 91.60 | 250.00 |
| Child age 6-8 | 1656 | 2900 | 74.20 | 123.20 | 250.00 |
| Child age 9-11 | 1825 | 3500 | 88.30 | 143.60 | 250.00 |
| Male age 12-14 | 2000 | 3700 | 91.60 | 158.20 | 250.00 |
| Male age 15-18 | 2100 | 3900 | 95.10 | 162.80 | 250.00 |
| Female age 12-18 | 1350 | 3000 | 92.20 | 132.80 | 250.00 |

**What do these measures imply about differences between the "needs" of adolescent males and others?**

**Ratio of the estimate for a male age 15-19 to the estimate for:**

| | | | | | |
|---|---|---|---|---|---|
| Child age 1-2 | 2.33 | 2.17 | 1.69 | 2.05 | 1.00 |
| Child age 3-5 | 1.62 | 1.70 | 1.57 | 1.78 | 1.00 |
| Child age 9-11 | 1.15 | 1.11 | 1.08 | 1.13 | 1.00 |
| Female age 12-18 | 1.56 | 1.30 | 1.03 | 1.23 | 1.00 |
| Adult man | 0.91 | 1.26 | 0.94 | 1.01 | 0.94 |
| Adult woman | 1.31 | 1.63 | 1.04 | 1.18 | 0.94 |

Sources: The estimates for caloric need are from Weinsier, Heimburger and Butterworth, 1989.
Those for the Thriftyand Moderate Food Cost budgets are from the USDA, Human Nutrition Information Service, 1992.
Those for the poverty threshold increments are from the poverty thresholds reported in Poverty in the United States: 1992, US Bureau of the Census.

**Table 2**
**Mean values of key variables**

| **Dependent variables:** | **Mean values for sample** |
|---|---|
| Hungry (family members "ever" did not have enough to eat in last year | 36% |
| Crowded (fewer bedrooms than 1 per 2 people) | 35% |
| Hungry or crowded | 58% |
| Hungry and crowded | 13% |
| **Family Economcs:** | |
| Cash income monthly | $769 |
| Food stamps grant | $155 |
| Gets WIC | 22% |
| Monthly rent (or mortgage, in 9% of cases) | $379 |
| Income[5] <50% of poverty standard | 14% |
| Income >=50%, <75% of poverty standard | 60% |
| Income >=75/%, <100% of poverty standard | 13% |
| Income >=100/% of poverty standard | 13% |
| "Better off" than last year financially | 16% |
| "Same as" last year financially | 48% |
| "Worse off" than last year financially | 36% |
| **Race/Ethnicity/Language** | |
| Respondent is White non-Latino | 15% |
| Respondent is Latino, English speaker | 24% |
| Respondent is Latino, Spanish speaker | 26% |
| Respondent is African American | 31% |
| Respondent is Other race | 4% |
| **Household and Family Composition** | |
| Average number of children in family[1] | 2.3 |
| Number of children who are age 0-5 | 0.9 |
| Number of children who are age 6-13 | 0.9 |
| Number of children who are female, age 14-19 | 0.2 |
| Number of children who are male, age 14-19 | 0.3 |
| FG case[2], no extra children or adults | 52% |
| UP case[3] | 8% |
| FG household, has extra[4] adult man or men (spouse, partner or other) and no extra children | 20% |
| FG household, has extra[4] woman (women), no extra men and no extra children | 7% |
| FG household, has extra[4] adult(s) & extra children | 13% |
| **Human Capital and Local Resources** | |
| Years of education of R or Spouse (higher) | 10.5 |
| Number of food banks in zip code | 2.6 |
| Percent in current residence 1 year or less | 38% |
| Percent in current residence 4 years or more | 34% |
| Sample size | 1705 |

Notes to Table 2.

1. "Number of children" is the respondent's own and step children under 20 in the household plus any others for whom she receives AFDC.
2. FG ("Family Group") cases are single-parent AFDC recipient families. They are headed by a man in only 2% of cases and by a teen (age 19 or less) in only 3% of cases.
3. UP ("Unemployed Parent") cases are two-parent families on AFDC because of very low income and the unemployment of primary earner.
4. "Extra" children are ones not included under Note 1 above. "Extra" adults are all adults coresiding with an FG respondent.
5. Income is all sources of cash, and does not include food stamps. The top 2% and bottom 2% of cases were trimmed and set to missing.

**Table 3**
**Hunger and Crowding by Income-to-needs ratio**

| | | *Income-to-needs ratio (income as % of poverty)* | | | |
|---|---|---|---|---|---|
| | All respondents | <50% | 50% -74% | 75%-99% | >=100% |
| **Percent in income category reporting:** | | | | | |
| No hunger in past year | 64% | 51% | 64% | 70% | 75% |
| Any hunger in past year | 36% | 49% | 36% | 31% | 25% |
| Parents or children hungry only "rarely" in yea | 15% | 26% | 13% | 14% | 10% |
| Parents or children hungry "sometimes" | 13% | 16% | 14% | 11% | 11% |
| Parents or children hungry "often" | 8% | 8% | 10% | 6% | 4% |
| Crowded (less than 0 5 bedrooms per person | 35% | 64% | 33% | 30% | 22% |
| Bedrooms per person | 0.54 | 0 38 | 0 55 | 0 61 | 0 64 |
| Either hungry or crowded | 58% | 81% | 58% | 49% | 43% |
| Both hungry and crowded | 13% | 32% | 11% | 10% | 4% |

**Table 4**

**Logistic regression models predicting hunger and crowding**

| | Model 1 | | Model 2 | | Model 3 | |
|---|---|---|---|---|---|---|
| | **Hunger** | **Crowding** | **Hunger** | **Crowding** | **Hunger** | **Crowding** |
| | Beta | Beta | Beta | Beta | Beta | Beta |
| | *(t-ratio)* | *(t-ratio)* | *(t-ratio)* | *(t-ratio)* | *(t-ratio)* | *(t-ratio)* |
| Gross cash income (logged) | -0 810 *** | -0.938 *** | -0 821 *** | -0 949 *** | -0 909 *** | -0.908 *** |
| | *5 13* | *5 35* | *5 12* | *5 30* | *5 59* | *4 99* |
| Poverty standard for the family (logged) | 1 061 *** | 4 387 *** | 1 123 *** | 4 341 *** | 1 380 * | 3 033 *** |
| | *4 49* | *15 72* | *4 45* | *14 50* | *2 30* | *4 61* |
| Food Stamps Grant (logged) | | | 0 050 | 0 135 *** | 0 046 | 0 145 *** |
| | | | *1 45* | *3 69* | *1 30* | *3 94* |
| Gets WIC | | | -0 302 * | 0 938 *** | -0 037 | 0 699 *** |
| | | | *0 33* | *7 16* | *0 27* | *4 89* |
| Number of children in family | | | | | -0 730 | *0 34* ** |
| | | | | | *0 64* | *2 61* |
| Pct of children who are aged 0-5 | | | | | -0 459 ** | 0 561 ** |
| | | | | | *2 95* | *3 17* |
| Pct of children who are female, age 14-19 | | | | | 0 115 | 0 532 |
| | | | | | *0 43* | *1 66* |
| Pct of children who are male, age 14-19 | | | | | 0 832 *** | -0 557 |
| | | | | | *4 01* | *1 87* |
| Intercept | -2 670 | -25 160 *** | -3 194 * | -24 390 | -0 421 | 16 432 *** |
| | *1 77* | *14 65* | *2 04* | *13 63* | *1 09* | *3 90* |
| - 2 Log Likelihood | 2181 9 | 1930 9 | 2174 1 | 1866 1 | 2132 6 | 1839 1 |
| Chi-square for significance of model | 34 3 | 308 7 | 42 0 | 373 5 | 83 5 | 400 1 |
| % of Hungry/Crowded cases correctly predicted | 3% | 46% | 3% | 48% | 19% | 50% |
| % of Not hungry/Not crowded cases correctly predicted | 99% | 87% | 97% | 87% | 92% | 87% |

Notes to Table 5

Sample size for the "crowding" regressions is 1705 and for the "hunger" regressions is 1679 Significance indicators * if p<= 05, ** if p< 01, *** if p< 001

**Table 5**

**Logistic regression models predicting hunger and crowding**

| | Hunger | | Crowding | |
|---|---|---|---|---|
| | Beta | | Beta | |
| | *(t-ratio)* | | *(t-ratio)* | |
| Gross cash income (log) | -0.665 | *** | -0.331 | |
| | *3.66* | | *1.48* | |
| Poverty standard for family (log) | 2.203 | ** | 0.615 | |
| | *2.67* | | *0.59* | |
| Food Stamps Grant (log) | 0.007 | | -0.089 | |
| | *0.18* | | *1.89* | |
| Gets WIC | -0.136 | | 0.676 | *** |
| | *0.88* | | *3.81* | |
| Rent per bedroom (log) | 0.073 | | 0.784 | *** |
| | *1.33* | | *8.19* | |
| Number of children in family | -0.252 | | 0.899 | *** |
| | *1.69* | | *4.52* | |
| Pct of children aged 0-5 | -0.319 | | 0.296 | |
| | *1.83* | | *1.33* | |
| Pct of children females age 14-19 | -0.222 | | 0.600 | |
| | *0.72* | | *1.31* | |
| Pct of children males age 14-19 | 0.730 | ** | -0.741 | * |
| | *3.24* | | *2.05* | |
| Financially worse off than last year | 1.188 | *** | 0.026 | |
| | *10.16* | | *0.17* | |
| Latino, English speaker | 0.086 | | 0.911 | *** |
| | *0.45* | | *3.59* | |
| Latino, Spanish speaker | 0.643 | ** | 2.117 | *** |
| | *2.90* | | *7.24* | |
| African American | 0.054 | | 0.528 | * |
| | *0.29* | | *2.04* | |
| Other race | 0.184 | | -0.737 | |
| | *0.51* | | *1.26* | |
| R's/spouse's education (highest) | -0.001 | | 0.040 | |
| | *0.03* | | *1.26* | |
| Years lived in current home | -0.028 | ** | -0.042 | *** |
| | *2.88* | | *3.18* | |
| Unemployed Parent (UP) case | -0.386 | | 1.058 | ** |
| | *1.50* | | *3.25* | |
| FG household, has extra[2] adult | -0.725 | *** | 0.830 | *** |
| man/men and no extra children | *4.04* | | *3.58* | |
| FG household, only extra[2] | 0.177 | | 0.660 | * |
| person is a woman (or women) | *0.82* | | *2.20* | |
| FG household, has extra adults | -0.236 | | 3.032 | *** |
| and extra children[2] | *1.18* | | *11.41* | |
| Number of food banks in zip code | -0.008 | | 0.058 | |
| | *0.34* | | *1.91* | |
| Intercept | 11.683 | * | 11.042 | |
| | *2.21* | | *1.68* | |
| - 2 Log Likelihood | 1878.4 | | 1292.4 | |
| Chi-square for significance of model | 239.6 | | 776.9 | |
| % of Hungry/Crowded cases correctly predicted: | 43% | | 68% | |
| % of Not hungry/Not crowded cases correctly predicted: | 85% | | 89% | |

Notes to Table 5.

1. "Number of children" is the respondent's own and step children under 20 in the household.

plus any others for whom she receives AFDC

2. "Extra" children are ones not included under Note 1 above. "Extra" adults are all adults coresiding with an FG respondent

3. Omitted categories are White (non-Hispanic); R is in FG case with no spouse or partner and no other adults.

financial situation is "same as" or "better than" preceding year

4. Sample size for all regressions is 1614. Significance indicators: * if p<= .05, ** if p<.01, *** if p< .001