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Does poor health predict moving, move quality, and desire to move?: A study examining neighborhood selection in US adolescents and adults

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Abstract

Background—To date, very little research has considered the role of health on shaping characteristics of the neighborhood, including mobility patterns. We explored whether individual health status is one of the characteristics that shape and constrain where individuals live.

Methods—Using data from the National Longitudinal Study of Adolescent Health, we examined whether 16 health indicators (e.g., health behaviors, symptoms, overall status) predicted moving, move quality, and desire to move.

Results—3.8% of adolescents (n=490) reported a move in the past year. In the unadjusted models, 10 health indicators were associated with moving; the magnitude of association for these health indicators was similar to socio-demographic characteristics. Seven of these health-moving associations persisted after adjusting for covariates. Health indicators were also associated with moving quality, with a greater number of past year health problems in the child being associated with moving to lower income neighborhood and parent disability or poor health being associated with moving to a higher income neighborhood. Almost every poor health status indicator was associated with a greater desire to move, even after adjusting for covariates.

Conclusion—Findings suggest health status influences moving. Prior health status must therefore be considered when interpreting results from neighborhood effects studies.

Keywords

desire to move; health; move quality; moving; neighborhood selection

INTRODUCTION

For almost a century, scholars have examined neighborhoods as a determinant of individual health (1–6). To date, evidence has accumulated to suggest that multiple dimensions of the neighborhood are associated with mental and physical health outcomes across the life course, even after adjusting for individual-level attributes (7–12). The hypotheses underpinning these “neighborhood effects” studies have been that economic (e.g., levels of poverty in the neighborhood), social (e.g., perceptions of safety, social control, social cohesion), and physical features (e.g., quality and maintenance of public spaces) of neighborhoods contribute to patterns of health and illness (13–15). These findings have been detected among studies using different study designs and multiple measures of the neighborhood environment. Although prior studies have generally found that the effect of neighborhoods on health is small, these studies do suggest there may be identifiable and malleable predictors at the neighborhood level that could be intervened upon to shift the distribution of health problems in the population.

One of the most fundamental concerns with interpreting prior results from neighborhood effects research, particularly in non-experimental or observational studies, relates to selection effects, or the sorting of individuals by neighborhoods. Critics have argued that observed neighborhood-health associations may not be due to neighborhoods *causing* people to become ill, but rather can be explained by people *selecting* neighborhoods based on their health status, behaviors, or other structural factors. In other words, health status and health behaviors may shape the composition, or characteristics of individuals, in a given neighborhood. As a result, a major concern of prior studies is that reported neighborhood effects on health may not be real, but rather an artifact of the failure to statistically control for variables that cause individuals to select neighborhoods on the basis of their previous health status or conditions (16).

There is a rich history of work illustrating that a range of personal factors, such as race/ethnicity, socioeconomic status, and marital status, as well as neighborhood or structural features, such as levels of discrimination, housing prices, and distribution of resources, have shaped and constrained where individuals live. For example, local access to high paying jobs (17), housing quality (18), housing supply (19), and policies related to housing discrimination (20) have all been shown to restrict residential possibilities and promote segregation particularly among minorities and low-income families. As a result, there are concentrations of people within specific communities who share similar features with respect to race and socioeconomic status (21).

In this study, we explore whether individual health status is one of the characteristics that may further shape and constrain where individuals live. Beyond simply providing new knowledge to better understand potential neighborhood selection effects, or conceptualizing prior health status as a nuisance variable when studying neighborhood effects, we think examination of the role of health on neighborhood mobility is useful in its own right for several reasons. To date, very little research has considered the “health to neighborhood” relationship, or the role of health on shaping characteristics of the neighborhood, including mobility patterns. Instead, the majority of prior studies have focused solely on the role of

neighborhoods on health. As the relationship between neighborhoods and health is likely bidirectional (22), with neighborhoods shaping health and health status determining the composition and characteristics of neighborhoods, we think greater exploration of both directions of this bi-directional relationship would be informative for understanding the role of social determinants and health and identifying opportunities for intervention. For example, a greater understanding of the “health to neighborhood” relationship could increase knowledge of the consequences of health on mobility and may help identify potential intervention targets to optimize neighborhoods and reduce risk for illness.

Empirical studies examining how residents’ health status influences their choice of neighborhood environment are rare and sometimes mixed (23, 24); however, extant studies suggest health may play a role in choosing a neighborhood or in residential mobility. At least four different sources of prior studies are consistent with such a hypothesis. The first source of evidence comes from quasi-experimental and experimental studies of residential mobility, including the Gautreaux Program, which resulted from a court order to reduce discrimination in the location of new housing projects (25), and the Moving to Opportunity (MTO) experiment (26), which was a large randomized control trial examining the impact of housing vouchers. In both studies, researchers found that certain individuals were more likely than others to be motivated to move. Regardless of whether they were assigned to the experimental or control group (25, 27), the results of the MTO project showed that two-thirds of the control group moved between waves of data collection (28). Thus, even in experimental studies, individuals *choose* their residence.

Second, observational studies examining aspects of *residential mobility* (e.g., frequency in change of residence) by health status have found more mobility among adults with depression (29), and children with poor health (30), even after adjusting for socio-demographic factors. Overall, the literature describing the relationship between mobility and health has focused largely on mental health compared to other health problems (26, 31).

Third, the strongest evidence investigating the relationship between health status and locale comes largely from studies of changes in geographical location on a large scale (e.g., moves to new states or countries) that examine associations between health and moving using cross-sectional methods (e.g., 32). Most of the work on migrations have been conducted in areas of political, and massive social unrest that led to mass emigration (33). Studies of the large scale migrations have found differential characteristics of migrants by health status when age is accounted for, with young migrants having better health than non-migrants and older migrants having poorer health than non-migrants (34–37). Movements of particular age groups in or out of a neighborhood contribute to the observed concentration of positive health status within affluent areas and the concentration of negative health status among deprived areas (38). Thus, regardless of the direction of the health status, it appears that health is influencing the choice to move. Moreover, studies have also found migrants are selective in their choice of destination, with health status influencing the decision of where to move (37). Migrants who move from lower to higher socioeconomic neighborhoods have also demonstrated better health (prior to moving) than those who move from higher to lower socioeconomic locations (39); this particularly refers to individuals with chronic health conditions (40, 41).

Outside of this body of research, knowledge is limited concerning whether people with specific health problems are more likely to live in certain residential environments, especially high poverty neighborhoods. Increasing knowledge in this area is crucial to understanding not just the magnitude of potential neighborhood selection and how to interpret prior and future “neighborhood effects” studies, but is also an important dimension in unpacking the complex relationship between health and neighborhoods. To address these gaps, this study used nationally-representative data to examine whether parent- or child-reported health problems were associated with moving to a new neighborhood. In the current study, we examined the independent contribution of health and socioeconomic factors to neighborhood choice, as defined by moving, move quality, and desire to move. We examined whether individuals with health problems were more likely than their healthy counterparts to report a) moving to a new neighborhood, b) moving to a neighborhood with greater levels of poverty, and c) a desire to move from their current neighborhood.

METHODS

Sample and procedures

Data came from the National Longitudinal Study of Adolescent Health (AddHealth), a United States nationally-representative longitudinal survey of adolescents (42). AddHealth recruited a school-based sample of adolescents in grades 7 through 12 and has followed respondents for a total of four waves into young adulthood. At Wave 1, 20,745 adolescents participated in a detailed in-home interview. In addition, 17,670 parental caregivers completed a Wave 1 survey. At Wave 2, which was completed approximately one year after Wave 1, 14,738 in-home Wave 1 respondents were interviewed.

Measures

Predictors: Health Status

Adolescent-reported measures: The Wave 1 survey included items on different dimensions of health status and health-related behaviors. *General health status* was ascertained by the item: In general, how is your health (0=good/very good/excellent health; 1=fair/poor health)? Frequency of *health related absences from school* were derived from two questions: In the past month, how often did a health or emotional problem cause you to miss: (1) a day of school, or (2) a social or recreational activity (0=none/just a few; 1=about once a week to every day)? *Injury-related health* was captured by the degree of seriousness of the worst injury during the past year (0=very minor or minor; 1=serious to extremely serious). *Physical disability* was captured with the item: Do you have difficulty using your hands, arms, legs, or feet because of a permanent physical condition (0=no; 1=yes)? Frequency of *alcohol use* was ascertained by the item: During the past 12 months, on how many days did you drink alcohol (0=never; 1=a little, defined as 1–2 days a year to 2–3 days per month; 2=a lot, defined as 1–2 days a week to every day)? *Drug use* was ascertained by the item: During the past 30 days, how many times did you use marijuana (0=never; 1=at least one time)? *Depressive symptoms* (coded as a scale) were assessed by the 19-item version of the Center for Epidemiologic Studies of Depression Scale (CES-D). *Number of health symptoms* (coded as a count of the conditions experienced once a week or more) was derived from questions about the frequency of experiencing 20 health symptoms over the

past 12 months (e.g., headaches, stomachaches, chest pains, dizziness, poor appetite). *BMI* coded continuously) was calculated by dividing weight (in pounds) by height-squared (in inches).

Parent-reported measures: The Wave 1 parent survey included a collection of measures on different dimensions of health status and health related behaviors of both the adolescent and parent reporter (usually the mother or female head of household). *Total number of health problems of the child* was assessed by questions on the presence of six current health problems: obesity, migraines, allergies, asthma, alcoholism, and diabetes (0=0 health problems; 1=1 health problem; 2=2 or more health problems). Health problems of the biological mother and father were assessed by the same six items and summed to create a variable capturing *total number of health problems of the parents* 0=0 health problems; 1=1–2 health problem; 2=3 or more health problems). *Parent disability* was ascertained by the item: Are you disabled (0=no; 1=yes)? *Parent general health status* was ascertained by the item: How is your general physical health (0=good/very good/excellent health; 1=fair/poor health)? *Parental alcohol* use derived from the item: How often do you drink alcohol (0=never; 1=a little, defined as 1–2 days a year to 2–3 days per month; 2=a lot, defined as 1–2 days a week to every day)? *Parental smoking* status was determined by the item: Do you smoke (0=no, 1=yes)? *Child physical or mental disability* was assessed by two questions on physical disability (concerning difficulty using hands or arms and feet or legs) and by three questions on mental disability (concerning mental retardation, learning disabilities, and special education) (0=no disability; 1=any disability).

Outcomes: Move Status, Move Quality, and Desire to Move—We created three measures to describe participants' move status, move quality, and desire to move. First, we constructed a binary indicator denoting whether or not the adolescent had moved Census tracts between Wave 1 and 2 (0=did not move; 1=moved). Second, among those who moved, we created a continuous and a binary measure of move *quality*. Specifically, for each mover, we used Census-level data to determine the percentage of residents in the tract who lived in poverty. Census tract poverty estimates were derived for both the past neighborhood, from which the participant moved from, and the new neighborhood, to which the participant moved. With these measures, we created a continuous score of move quality by subtracting Wave 1 neighborhood poverty from Wave 2 poverty. Thus, a negative beta coefficient can be interpreted as a move to lower poverty neighborhood and a positive beta coefficient can be interpreted as a move to a higher poverty neighborhood. We also constructed a dichotomous measure of move quality based on whether the new census tract had a lower or a higher percentage of poverty compared to the old one. Finally, *desire to move* was derived from the parent-reported item: How much would you like to move away from this neighborhood (0=no desire to move; 1=some or very much desire)?

Covariates—All adjusted models contained controls for sex (0=female; 1=male), age (continuous), adolescent self-reported race/ethnicity (0=white; 1=Black; 2=Hispanic; 3=other) and, as measures of socioeconomic status, parental education (highest level attained by either mother or father; 0=college degree or higher; 1=less than college), parental occupation (highest level attained by either mother or father; 0=professional or

manager; 1=technical, office, or sales; 2=service, construction, factory, transportation, security, military, etc.), and parental receipt of public assistance such a welfare (0=no; 1=yes). All covariates were taken from Wave 1.

Statistical analysis—We fit a series of multiple logistic regression models examining the association between health status with move status (mover vs. not a mover), quality of move (moved to a census tract of lower poverty vs. moved to census tract with higher poverty), and desire to move (some or very much desire vs. no desire). We also used a set of linear regression models to examine the association between health status and our continuous measure of move quality (i.e., change in level of neighborhood poverty). Across all models, each health indicator was examined individually to avoid problems with model fit due to multi-collinearity; thus, no predictors were entered simultaneously. All analyses were conducted in SAS version 9.2 using an analytic sample of 12,793 participants, who completed surveys in Waves 1 and 2, whose parents/caregivers completed a survey in Wave1, and who had complete data on all relevant study variables. Missing on health indicators and covariates was minimal, ranging from 0% (for sex) to 7.9% (for parent highest occupation). Apart from parent occupation and education, all variables had less than 3% missing data.

RESULTS

Respondents were generally in good health, though a large proportion reported having some health problems in the past year or engaging in risky behaviors. As shown in Table 1, which presents descriptive statistics for all predictors and covariates in the total sample and by move status, adolescents in the sample self-reported being in good health (93.18% reported good, very good or excellent health). However, 16.69% had more than one health problem, 15.25% had a serious injury, 8.42% drank alcohol a lot, 13.51% used marijuana in the past month, and 16.92% had a mental or physical disability. Similarly, the majority of parents (85.32%) reported good, very good, or excellent health, though, 24.93% reported 3 or more health problems (in either parent), 13.09% drank alcohol a lot, and 28.73% were smokers.

Moving was a rare occurrence in AddHealth, with 3.8% of respondents (n=490) reporting a move in the one year period between Wave 1 and Wave 2. In testing the association between each of the 16 health status measures and the odds of moving, we found slightly more than half (10 health indicators) were associated with move status (Model 1, Table 2). For many, the magnitude of the association between health status and moving was comparable to the association between socio-demographic characteristics and moving. For example, the odds of moving was 1.84 among youth who used alcohol a lot, compared to 1.78 for parents who had less than a college degree and 2.14 for parental receipt of public assistance. After adjusting for covariates, seven out of 10 of these associates remained significant (Model 2, Table 2). Specifically, children who reported more health related absences from school (OR=1.85; $p<0.001$) and frequent alcohol use (OR=1.61; $p<0.02$) were more likely to move. A significant and positive association was also found between depressive symptoms (OR=1.58; $p=0.001$) and number of past year poor health symptoms and move status (OR=1.06; $p=0.002$). With respect to parent-level measures, parents who reported fair or poor health were more likely than those with good, very good, or excellent health to report

moving (OR=1.40; $p=0.02$). In addition, parents who smoked (OR=1.62; $p<0.0001$) or reported that their child had a physical or mental disability were also more likely to move (OR=1.41; $p=0.02$). Even after imposing a Bonferroni adjustment for the number of health-specific tests conducted (adjusted p -value=0.003), we found that four (out of 16) health indicators (i.e., child health related absences, depressive symptoms, number of past year health symptoms, and parent smoking) remained associated with moving, with effect sizes ranging in magnitude from small (OR=1.06) to modest (OR=1.85). The magnitude of the association between health related absences and moving was greater than the association between all demographic and socioeconomic characteristics and moving, including receipt of public assistance (OR=1.76) and low educational attainment (OR=1.44).

To evaluate further the magnitude of these differences, we calculated predicted probabilities of moving using beta estimates from these logistic regression models. In these analyses, which focused on the referent group (White females of average age and high socioeconomic status), the probability of moving was nearly double among those with many child health related absences (4.7%) compared to those with few absences (2.6%) and almost double among those with a parent who smoked (3.9% vs. 2.5% among non-smoking parents). Moreover, the absolute difference in the probability of moving was 5% when comparing those with 0 past year health symptoms to those with 10 symptoms or those with low versus high depressive symptoms.

For those who moved ($N=490$), the level of poverty in their old neighborhood compared to their new neighborhood was typically similar. For example, on average, the difference in poverty between the old versus new neighborhood was less than 1% (mean=0.09%; $sd=12.41\%$). However, for some people there was a considerable difference between their old and new neighborhood; (minimum absolute difference=0.06%; maximum absolute difference=48.70%). More than half of the mover sample (55.10%; $n=270$) reported a greater than 5% change in poverty (in either direction; i.e., higher or lower) between their old neighborhood and new neighborhood; 33.88% ($n=166$) had between or equal to a 1% and 5% change; and the remaining 11.02% ($n=54$) had less than a 1% change in neighborhood poverty level.

In examining the relationship between health status and quality of move measured continuously (refer to Table 3), we found that a greater number of past year health symptoms was positively associated with moving to a lower income neighborhood ($\beta=0.005$; $p=0.007$), adjusting for covariates. However, parental disability ($\beta=-0.058$; $p=0.01$) or fair/poor health ($\beta=-0.053$; $p=0.001$) was *negatively* associated with moving to a lower income neighborhood (i.e., having a parent with a disability was associated with moving to a *higher* income neighborhood).

When we examined move quality using the dichotomous measure, we found 49% of movers reported transitioning into a census tract with a lower percentage of poverty than the previous tract. After adjusting for covariates (see Model 2 in Supplemental Table 1), only child reports of serious injury (OR=0.48; $p=0.02$) and parent fair/poor health status (OR=0.44; $p=0.02$) were associated with a lower odds of moving to a neighborhood with higher poverty.

Approximately 46% of parents (n=5,906) reported some or very much desire to move. As shown in Table 4, almost every poor health status indicator was associated with a greater desire to move, even after adjusting for covariates. For example, compared to people with good, very good, or excellent health, those with fair or poor health had 1.23 times the odds of having some or very much desire to move. Desire to move in Wave 1 was associated with actually moving by Wave 2, with those reporting some or very much desire to move having 1.98 times the odds of moving compared to those reporting no desire to move, even after adjusting for covariates (95% CI=1.58–2.48; $p<0.001$). However, desire to move was not associated with quality of move.

DISCUSSION

The current study examined the independent contribution of health and socioeconomic factors to neighborhood choice, as defined by moving, move quality, and desire to move. In so doing, we aimed to complement extant studies, which have largely focused on the relationship between neighborhoods and health, in order to increase knowledge of the bidirectional relationship between health and neighborhoods. A secondary goal was also to examine the sorting of individuals by geography, which has been described mostly in theoretical terms and has been examined empirically in a small number of studies (16), most of which have examined non-neighborhood based moves (e.g., moves between countries). We found that there does appear to be some evidence of neighborhood selection, with the health status indicators we examined oftentimes having stronger associations with move indicators than other demographic indicators, including socioeconomic status. For example, after adjusting for covariates, the odds of moving was 1.44 among youth whose parents had less than a college degree, compared to 1.85 for youth who reported more health related absences from school. Our results also suggest differences between parents and children in the quality of move by health status. For example, we found that a greater number of past year health problems in the child was associated with moving to a *lower* income neighborhood. However, parents with disabilities or fair or poor health were more likely to move to a *higher* income neighborhood. Thus, the influence of poor health on move quality was not uniform across all health conditions. Finally, we also found that almost every health status indicator was associated with desire to move, even after adjusting for covariates. Collectively, these findings suggest that neighborhood moving is influenced by health status and that prior health status may be an issue we must consider when interpreting results from neighborhood effects studies.

It is unclear why health status was not consistently associated with move quality in particular. As noted previously, we found that health problems among the children were more likely to predict moving to a *lower* income neighborhood whereas health problems among parents were more likely to predict moving to a *higher* income neighborhood. Moreover, when comparing parents to children on the same health condition, we found several instances where the health condition was associated with move quality in adults, but not children, and vice versa. For example, child physical disability was unrelated to move quality, but physical disability in the parent was. Although there are a number of possible explanations for why health status could have a different relationship to moving indicators among parents and children, such as differential access to health services or understanding

and reporting of health status, the source of conflicting findings is unclear. Given the dearth of prior empirical work on this topic, future studies are needed.

These results must be interpreted in light of the fact that moving was a relatively rare occurrence in our sample, as only 3.8% of adolescents reported a move in the past year. The low occurrence of moving was likely due to our examination of moves only during a one-year period. Given the association between desire to move and actually moving, it is possible that those with some or very much desire may have been more likely than those with no desire to have moved in the subsequent years. Although a longer longitudinal study would have been more ideal to understand the relationship between health status and moving, our examination of the association between a broad array of health indicators and moving is useful because the outcomes likely occurred close in time to the health measures we examined. However, future studies should examine how incident health problems and specific health conditions predict future moves and examine neighborhood changes over a longer period of time.

Results from our study suggest that examination of health conditions and health behaviors may play a pivotal role in how people “choose” a neighborhood. However, much more research is needed to further understand the ways in which people may choose neighborhoods based on their health status, behaviors, or other structural factors. We envision several different possible areas for future research. First, future studies can examine the meaning residents attribute to a particular residential location and the duration of their intended move. This is an important line of future inquiry, as residence in a particular neighborhood may not be permanent, but rather temporary until particular circumstances improve (32). Second, future studies can also more richly take into consideration changes in socioeconomic status, including family income, immigration status, race/ethnicity, and single parenthood over time. One of the main covariates that our study took into consideration was educational attainment, which has been consistently related to health (23). However, other dimensions of socioeconomic status, such as income, may fluctuate over time and have stronger relationships with moving based on some health conditions. Third, future studies should also examine how different measurement approaches and techniques can capture health in relation to moving. In our study, certain health measures were retrieved through self-report; however, as was reported in previous studies (43), using other assessments or medical diagnoses in tandem may be necessary to capture valid representation of certain health conditions. Finally, longitudinal studies are also needed to disentangle the complex relationship between neighborhoods, health, and residential mobility. By having repeated measures of neighborhood characteristics and health over time – and being able to observe the predictors and consequences of change in neighborhood residence over time, longitudinal studies will provide crucial new knowledge to both quantify and separate out potential selection effects. To that end, greater use of propensity score approaches, which epidemiologists have not yet widely adopted but allow investigators to address possible unmeasured confounding (44), may also help to better disentangle selection effects, even in the context of an experimental study.

If health does influence moving, as our study suggests, how can we interpret prior and future studies describing a relationship between neighborhoods and health? Findings from the

current study suggest that caution is warranted when applying a causal interpretation to both observational and experimental neighborhood effects studies. Results from this study suggest that because health status is associated move indicators, empirical studies may over or underestimate the relationship between neighborhoods and health depending on whether they take into account prior health status. In some cases, estimates of neighborhood effects on health may be over- or underestimated based on selection or confounding as individuals non-randomly “choose” to live in different neighborhoods. To further advance the science of neighborhood effects and health, additional studies are needed to quantify the degree of potential selection resulting from health-based moving and how prior health status may play a role in moving and the desire to move.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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References

1. March D, Hatch SL, Morgan C, Kirkbride JB, Bresnahan M, Fearon P, et al. Psychosis and place. *Epidemiologic Reviews*. 2008; 30(1):84–100. [PubMed: 18669521]
2. Kawachi, I.; Berkman, LF., editors. *Neighborhoods and Health*. New York, NY: Oxford University Press; 2003.
3. Faris, REL.; Dunham, HW. *Mental disorders in urban areas: An ecological study of schizophrenia and other psychoses*. Chicago, IL: The University of Chicago Press; 1939.
4. Silver E, Mulvey EP, Swanson JW. Neighborhood structural characteristics and mental disorder: Faris and Dunham revisited. *Social Science and Medicine*. 2002; 55(8):1457–1470. [PubMed: 12231022]
5. Jencks, C.; Mayer, SE. The social consequences of growing up in a poor neighborhood. In: Lynn, LE., Jr; McGeary, MGH., editors. *Inner City Poverty in the United States*. Washington, DC: National Academy Press; 1990.
6. Mayer SE, Jencks C. Growing up in poor neighborhoods: How much does it matter? *Science*. 1989; 243(4897):1441–1445. [PubMed: 17839748]
7. Ahern J, Galea S. Collective efficacy and major depression in urban neighborhoods. *American Journal of Epidemiology*. 2011; 173(12):1453–1462. [PubMed: 21527512]
8. Galea S, Ahern J, Nandi A, Tracy M, Beard J, Vlahov D. Urban neighborhood poverty and the incidence of depression in a population-based cohort study. *Annals of Epidemiology*. 2007; 17:171–179. [PubMed: 17320784]
9. Galea S, Ahern J, Rudenstine S, Wallace Z, Vlahov D. Urban built environment and depression: a multilevel analysis. *Journal of Epidemiology and Community Health*. 2005; 59(10):822–827. [PubMed: 16166352]
10. Mair CF, Diez Roux AV, Galea S. Are neighborhood characteristics associated with depressive symptoms? A critical review. *Journal of Epidemiology and Community Health*. 2008; 62(11):940–946. [PubMed: 18775943]
11. Theall KP, Brett ZH, Shirtcliff EA, Dunn EC, Drury SS. Neighborhood disorder and telomeres: Connecting children's exposure to community level stress and cellular response. *Social Science and Medicine*. 2013; 85:50–58. [PubMed: 23540366]

12. Leventhal T, Brooks-Gunn J. The neighborhoods they live in: The effects of neighborhood residence on child and adolescent outcomes. *Psychological Bulletin*. 2000; 126(2):309–337. [PubMed: 10748645]
13. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th ed.. Arlington, VA: American Psychiatric Publishing; 2013.
14. Ripke S, O'Dushlaine C, Chambert K, Moran JL, Kahler AK, Akterin S, et al. Genome-wide association analysis identifies 13 new risk loci for schizophrenia. *Nat Genet*. 2013 Oct; 45(10): 1150–1159. [PubMed: 23974872]
15. Perlis RH. Pharmacogenomic testing and personalized treatment of depression. *Clinical Chemistry*. 2014; 60(1):53–59. [PubMed: 24281779]
16. Subramanian, SV.; Glymour, MM.; Kawachi, I. Identifying causal ecologic effects on health: a methodologic assessment. In: Galea, S., editor. *Macrosocial determinants of population health*. New York: Springer Media; 2007. p. 301–331.
17. Flint J, Kendler KS. The genetics of major depression. *Neuron*. 2014; 81:484–503. [PubMed: 24507187]
18. Munafo MR, Flint J. Replication and heterogeneity in gene x environment interaction studies. *International Journal of Neuropsychopharmacology*. 2009; 12:727–729.
19. Gorlov IP, Gorlova OY, Sunyaev SR, Spitz MR, Amos CI. Shifting paradigm of association studies: Value of rare single-nucleotide polymorphisms. *American Journal of Human Genetics*. 2008; 82:100–112. [PubMed: 18179889]
20. Pizzagalli DA, Holmes AJ, Dillon DG, Goetz EL, Birk JL, Bogdan R, et al. Reduced caudate and nucleus accumbens response to rewards in unmedicated individuals with major depressive disorder. *American Journal of Psychiatry*. 2009; 166:702–710. [PubMed: 19411368]
21. Lee, ES.; Forthofer, RN. *Analyzing complex survey data*. Thousand Oaks: Sage; 2006.
22. Dunn EC, Masyn KE, Yudron M, Jones SM, Subramanian SV. Translating multilevel theory into multilevel research: Challenge and opportunities for understanding the social determinants of psychiatric disorders. *Social Psychiatry and Psychiatric Epidemiology*. 2014; 49:859–872. [PubMed: 24469555]
23. van Lenthe FJ, Martinkainen P, Mackenbach JP. Neighborhood inequalities in health and health-related behaviour: Results of selective migration. *Health and Place*. 2007; 13(1):123–137. [PubMed: 16386937]
24. Verheij RA, van de Mheen HD, de Bakker DH, Groenewegen PP, Mackenbach JP. Urban-rural variations in health in the Netherlands: Does selective migration play a part? *Journal of Epidemiology and Community Health*. 1998; 52:487–493. [PubMed: 9876359]
25. Rosenbaum JE. Changing the geography of opportunity by expanding residential choice: Lessons from the Gautreaux program. *Housing Policy Debate*. 1995; 6(1):231–269.
26. Sampson RJ. Moving to Inequality: Neighborhood Effects and Experiments Meet Social Structure. *American Journal of Sociology*. 2008; 114(1):189–231.
27. Ludwig J, Kling JR, Katz LF, Sanbonmatsu L, Liebman JB, Duncan GJ, et al. What Can We Learn about Neighborhood Effects from the Moving to Opportunity Experiment? *American Journal of Sociology*. 2008; 114(1):144–188.
28. Kooperberg C, LeBlanc M. Increasing the power of identifying gene x gene interactions in genome-wide association studies. *Genetic Epidemiology*. 2008; 32:255–263. [PubMed: 18200600]
29. Sampson RJ, Sharkey P. Neighborhood selection and the social reproduction of concentrated racial inequality. *Demography*. 2008; 45(1):1–29. [PubMed: 18390289]
30. Busacker A, Kasehagen L. Association of residential mobility with child health: An analysis of the 2007 National Surveys of Children's Health. *Maternal Child Health Journal*. 2012; 16:S78–S87. [PubMed: 22527774]
31. Peen J, Schoevers RA, Beekman AT, Dekker J. The current status of urban-rural differences in psychiatric disorders. *Acta Psychiatrica Scandinavica*. 2010; 121(2):84–93. [PubMed: 19624573]
32. Piro F, Næss Ø, Claussen B. Area deprivation and its association with health in a cross-sectional study: are the results biased by recent migration? *International journal for equity in health*. 2007; 6(1):10. [PubMed: 17883855]

33. Erlanger S. Attach Reignites Immigration Debate in Divided Oslo. *The New York Times*. 2011 Jul 26. 2011.
34. Bentham G. Migration and morbidity: Implications for geographical studies of disease. *Social Science and Medicine*. 1988; 26:49–54. [PubMed: 3353753]
35. Findlay SE. The directionality and age selective of the health-migration relation: Evidence from sequences of disability and mobility in the United States. *International Migration Review*. 1988; 22:4–29.
36. Halliday TJ, Kimmitt MC. Selective migration and health in the USA, 1984–1993. *Population Studies*. 2008; 62(3):321–334. [PubMed: 18937145]
37. Larson A, Bell M, Young AF. Clarifying the relationships between health and residential mobility. *Social Science and Medicine*. 2004; 59(2149–2160)
38. Connolly S, O'Reilly D, Rosato M. Increasing inequalities in health: Is it an artefact caused by the selective movement of people? *Social science & medicine*. 2007; 64(10):2008–2015. [PubMed: 17379374]
39. Norman P, Boyle P, Rees P. Selective migration, health, and deprivation: A longitudinal analysis. *Social Science and Medicine*. 2005; 60:2755–2771. [PubMed: 15820585]
40. van Lenthe FJ, Martikainen P, Mackenbach JP. Neighbourhood inequalities in health and health-related behaviour: results of selective migration? *Health & place*. 2007; 13(1):123–137. [PubMed: 16386937]
41. Cox M, Boyle PJ, Davey P, Morris A. Does health-selective migration following diagnosis strengthen the relationship between Type 2 diabetes and deprivation? *Social science & medicine*. 2007; 65(1):32–42. [PubMed: 17490796]
42. Resnick MD, Bearman PS, Blum RW, Bauman KE, Harris KM, Jones J, et al. Protecting adolescents from harm: Findings from the National Longitudinal Study on Adolescent Health. *Journal of the American Medical Association*. 1997; 278:823–832. [PubMed: 9293990]
43. Mackenbach JP, Looman CW, van der Meer JB. Differences in the misreporting of chronic conditions, by level of education: the effect on inequalities in prevalence rates. *American Journal of Public Health*. 1996; 86(5):706–711. [PubMed: 8629723]
44. Joffe MM, Rosenbaum PR. Invited commentary: propensity scores. *American Journal of Epidemiology*. 1999; 150:327–333. [PubMed: 10453808]

Table 1

Descriptive Statistics on Health Measures and Covariates at Wave 1 in the Total Sample (N= 12,793) and by Move Status

Child-Reported Items	Move Status					
	Total Sample (N=12,793)		Non-Mover (N=12,303)		Mover (N=490)	
	N	%	N	%	N	%
General Health Status						
Good/Very Good/Excellent	11915	93.18	11466	93.23	449	91.82
Fair/Poor	872	6.82	832	6.77	40	8.18
Health-Related Absences from School						
None/Just a few	12093	94.62	11648	94.77	445	90.82
Weekly to every day	687	5.38	643	5.23	44	8.98
Worst Injury						
Minor	10816	84.75	10413	84.84	403	82.41
Serious	1946	15.25	1860	15.16	86	17.59
Physical Disability						
No	12468	97.54	11996	97.58	472	96.52
Yes	315	2.46	298	2.42	17	3.48
Alcohol Use						
Never	7036	55.56	6804	55.85	232	48.13
A Little	4562	36.02	4375	35.91	187	38.80
A Lot	1066	8.42	1003	8.23	63	13.07
Marijuana Use						
No	10875	86.49	10480	86.63	395	82.98
Yes	1699	13.51	1618	13.37	81	17.02
Mean	SD	Mean	SD	Mean	SD	
Depressive Symptoms	0.59	0.40	0.58	0.39	0.68	0.43
# of Health Symptoms	3.14	2.96	3.12	2.95	3.67	3.17
BMI	22.34	4.42	22.34	4.43	22.3	4.17
Parent-Reported Items	N	%	N	%	N	%

Child-Reported Items	Move Status					
	Total Sample (N=12,793)		Non-Mover (N=12,303)		Mover (N=490)	
	N	%	N	%	N	%
# of Health Problems in Child						
0	6144	48.88	5917	48.89	227	48.61
1	4328	34.43	4183	34.56	145	31.05
2 or more	2098	16.69	2003	16.55	95	20.34
# of Health Problems in Parents						
0	2759	22.20	2669	22.29	90	19.69
1-2	6572	52.87	6326	52.84	246	53.83
3 or more	3099	24.93	2978	24.87	121	26.48
Parent Disability						
No	11954	93.86	11515	94.01	439	90.14
Yes	782	6.14	734	5.99	48	9.86
Parent General Health Status						
Good/Very Good/ Excellent	10881	85.32	10504	85.64	377	77.25
Fair/Poor	1872	14.68	1761	14.36	111	22.75
Parent Alcohol Use						
Never	5689	44.69	5455	44.55	234	48.25
A Little	5375	42.22	5197	42.44	178	36.70
A Lot	1666	13.09	1593	13.01	73	15.05
Parent Smoking						
No	9076	71.27	8788	71.74	288	59.38
Yes	3658	28.73	3461	28.26	197	40.62
Child Mental or Physical Disability						
No	10455	83.08	10089	83.26	366	78.21
Yes	2130	16.92	2028	16.74	102	21.79
Covariates	N	%	N	%	N	%
Sex						
Female	6553	51.22	6254	50.83	299	61.02

	Move Status					
	Total Sample (N=12,793)		Non-Mover (N=12,303)		Mover (N=490)	
	N	%	N	%	N	%
Child-Reported Items						
Male	6240	48.78	6049	49.17	191	38.98
Race						
White	6851	53.58	6614	53.79	237	48.37
Black	2532	19.80	2434	19.79	98	20.00
Hispanic	1940	15.17	1847	15.02	93	18.98
Other	1464	11.45	1402	11.40	62	12.65
Parent Welfare Receipt						
No	11124	88.61	10754	88.98	370	79.06
Yes	1430	11.39	1332	11.02	98	20.94
Parent Highest Education						
College or more	4462	36.67	4351	37.12	111	24.83
Less than College	7707	63.33	7371	62.88	336	75.17
Parent Highest Occupation						
Professional/Manager	4260	36.16	4143	36.43	117	28.75
Technical/Office worker/Sales	3119	26.48	3027	26.62	92	22.60
Service/Construction/Military	4401	37.36	4203	36.96	198	48.65
Child Age (in years)	Mean	SD	Mean	SD	Mean	SD
	15.74	1.58	15.73	1.57	15.91	1.66

Cell entries are numbers and percentages for categorical variables (or means and standard deviations for continuous variables). Movers refer to participants who reported having moved to a new census tract between Wave 1 and Wave 2. Columns may not add to 100% due to rounding. Columns may not add to the total sample size due to missing values.

Unadjusted and Adjusted Logistic Regression Analysis Modeling Association Between Health Measures and Move Status (Mover vs. Non-mover) in the Total Sample (N= 12,793)

Table 2

Child-Reported Items	Model 1			Model 2		
	OR	95% CI	p-value	OR	95% CI	p-value
General Health Status						
Good/Very Good/Excellent	ref	ref		ref	ref	
Fair/Poor	1.23	0.91–1.65	0.17	1.20	0.85–1.70	0.29
Health-Related Absences from School						
None/Just a few	ref	ref		ref	ref	
Weekly to every day	1.79	1.39–2.31	<0.0001	1.85	1.37–2.50	<0.0001
Worst Injury						
Minor	ref	ref		ref	ref	
Serious	1.20	0.96–1.49	0.12	1.24	0.95–1.63	0.12
Physical Disability						
No	ref	ref		ref	ref	
Yes	1.45	0.85–2.47	0.17	1.25	0.69–2.25	0.46
Alcohol Use						
Never	ref	ref		ref	ref	
A Little	1.25	0.98–1.60	0.07	1.23	0.94–1.60	0.13
A Lot	1.84	1.31–2.60	0.0005	1.61	1.06–2.43	0.02
Marijuana Use						
No	ref	ref		ref	ref	
Yes	1.33	1.01–1.75	0.04	1.23	0.91–1.66	0.18
Depressive Symptoms	1.73	1.35–2.22	<0.0001	1.58	1.20–2.07	0.001
# of Health Symptoms	1.06	1.02–1.10	0.001	1.06	1.02–1.10	0.002
BMI	1.00	0.98–1.02	0.86	0.99	0.97–1.02	0.48
Parent-Reported Items						
# of Health Problems in Child						
0	ref	ref		ref	ref	
1	0.90	0.72–1.14	0.39	0.96	0.75–1.23	0.73

Child-Reported Items	Model 1			Model 2		
	OR	95% CI	p-value	OR	95% CI	p-value
2 or more	1.24	0.97–1.58	0.09	1.11	0.83–1.49	0.48
# of Health Problems in Parents						
0	ref	ref		ref	ref	
1–2	1.15	0.90–1.49	0.27	1.17	0.87–1.57	0.31
3 or more	1.42	0.93–1.56	0.16	1.08	0.78–1.49	0.65
Parent Disability						
No	ref	ref		ref	ref	
Yes	1.72	1.24–2.37	0.001	1.46	0.93–2.30	0.10
Parent General Health Status						
Good/Very Good/ Excellent	ref	ref		ref	ref	
Fair/Poor	1.76	1.38–2.23	<0.0001	1.40	1.05–1.85	0.02
Parent Alcohol Use						
Never	ref	ref		ref	ref	
A Little	0.80	0.65–0.98	0.03	0.91	0.71–1.17	0.47
A Lot	1.07	0.81–1.42	0.65	1.30	0.93–1.83	0.13
Parent Smoking						
No	ref	ref		ref	ref	
Yes	1.74	1.41–2.14	<0.0001	1.62	1.27–2.06	0.0001
Child Mental or Physical Disability						
No	ref	ref		ref	ref	
Yes	1.39	1.09–1.77	0.008	1.41	1.06–1.90	0.02
Covariates						
Sex						
Female	ref	ref		ref	ref	
Male	0.66	0.54–0.81	<0.0001	0.70	0.56–0.87	0.001
Race						
White	ref	ref		ref	ref	
Black	1.12	0.80–1.57	0.50	1.00	0.68–1.39	0.89
Hispanic	1.41	0.92–2.14	0.11	1.22	0.75–1.99	0.42

Child-Reported Items	Model 1				Model 2			
	OR	95% CI	p-value		OR	95% CI	p-value	
Other	1.23	0.85–1.78	0.26		1.15	0.76–1.73	0.52	
Parent Welfare Receipt								
No	ref	ref			ref	ref		
Yes	2.14	1.58–2.90	<0.0001		1.76	1.20–2.58	0.004	
Parent Highest Education								
College or more	ref	ref			ref	ref		
Less than College	1.78	1.38–2.32	<0.0001		1.44	1.08–1.91	0.01	
Parent Highest Occupation								
Professional/Manager	ref	ref			ref	ref		
Technical/Office worker/Sales	1.08	0.80–1.44	0.62		0.90	0.67–1.22	0.49	
Service/Construction/Military	1.67	1.29–2.16	<0.0001		1.22	0.92–1.63	0.17	
Child Age (in years)	1.07	0.98–1.17	0.11		1.04	0.95–1.14	0.38	

Cell entries are odds ratios (exponentiated beta coefficients), 95% confidence intervals, and p-values. Model 1 examined the unadjusted association between child- or parent- reported health status measures on move status (movers vs. non-movers). Model 2 examined the effect of child- or parent- reported predictors on move status, adjusting for the following covariates: child sex, race, and age; and parent education, occupation, and welfare receipt. In both models, each predictor variable was entered into the model individually; thus, no predictors were entered simultaneously.

Table 3

Adjusted Linear Regression Analysis Modeling Association Between Health Measures and Change in Percent Poverty Among Movers' Former and New Neighborhoods (n=490)

Child-Reported Items	Model 1			Model 2		
	Beta	SE	p-value	Beta	SE	p-value
General Health Status						
Good/Very Good/Excellent	ref	ref		ref	ref	
Fair/Poor	0.026	0.020	0.21	0.035	0.022	0.11
Health-Related Absences from School						
None/Just a few	ref	ref		ref	ref	
Weekly to every day	0.014	0.020	0.49	0.027	0.021	0.19
Worst Injury						
Minor	ref	ref		ref	ref	
Serious	-0.012	0.015	0.43	-0.021	0.016	0.21
Physical Disability						
No	ref	ref		ref	ref	
Yes	0.052	0.031	0.087	0.045	0.035	0.21
Alcohol Use						
Never	ref	ref		ref	ref	
A Little	0.002	0.012	0.85	0.006	0.014	0.66
A Lot	0.003	0.018	0.87	-0.01	0.021	0.50
Marijuana Use						
No	ref	ref		ref	ref	
Yes	0.005	0.015	0.72	0.007	0.017	0.69
Depressive Symptoms	0.016	0.013	0.22	0.015	0.014	0.31
# of Health Symptoms	0.004	0.002	0.019	0.005	0.002	0.007
BMI	-0.001	0.001	0.65	-0.001	0.001	0.57
Parent-Reported Items						
# of Health Problems in Child						
0	ref	ref		ref	ref	
1	0.016	0.013	0.22	0.010	0.014	0.49

Child-Reported Items	Model 1				Model 2			
	Beta	SE	p-value	Beta	SE	p-value	Beta	p-value
2 or more	-0.003	0.012	0.85	0.000	0.017	0.98		
# of Health Problems in Parents								
0	ref	ref		ref	ref			
1-2	0.022	0.015	0.16	0.012	0.016	0.45		
3 or more	0.006	0.017	0.75	0.002	0.019	0.93		
Parent Disability								
No	ref	ref		ref	ref			
Yes	-0.030	0.019	0.11	-0.058	0.024	0.01		
Parent General Health Status								
Good/Very Good/ Excellent	ref	ref		ref	ref			
Fair/Poor	-0.057	0.013	<0.0001	-0.053	0.016	0.001		
Parent Alcohol Use								
Never	ref	ref		ref	ref			
A Little	-0.006	0.012	0.64	-0.010	0.014	0.45		
A Lot	0.007	0.017	0.67	0.002	0.018	0.93		
Parent Smoking								
No	ref	ref		ref	ref			
Yes	0.016	0.011	0.17	0.025	0.013	0.06		
Child Mental or Physical Disability								
No	ref	ref		ref	ref			
Yes	0.013	0.014	0.36	0.010	0.016	0.53		
Covariates								
Sex								
Female	ref	ref		ref	ref			
Male	-0.017	0.011	0.14	-0.016	0.012	0.21		
Race								
White	ref	ref		ref	ref			
Black	-0.008	0.015	0.60	-0.036	0.017	0.03		
Hispanic	0.009	0.015	0.56	0.007	0.017	0.69		

Child-Reported Items	Model 1			Model 2		
	Beta	SE	p-value	Beta	SE	p-value
Other	0.010	0.018	0.58	-0.016	0.020	0.40
Parent Welfare Receipt						
No	ref	ref		ref	ref	
Yes	-0.014	0.014	0.31	-0.031	0.017	0.08
Parent Highest Education						
College or more	ref	ref		ref	ref	
Less than College	-0.016	0.014	0.23	-0.015	0.015	0.31
Parent Highest Occupation						
Professional/Manager	ref	ref		ref	ref	
Technical/Office worker/Sales	-0.017	0.017	0.30	-0.020	0.015	0.20
Service/Construction/Military	-0.011	0.014	0.43	-0.030	0.018	0.09
Child Age (in years)	-0.004	0.003	0.25	-0.002	0.004	0.54

Cell entries are parameter estimates (beta coefficients), standard errors, and p-values. Model 1 examined the unadjusted effect of child- or parent- reported health status measures on change in percent poverty among movers former and new neighborhood (n=490). Model 2 examined the association between child- or parent- reported health status measures on change in percent poverty among movers former and new neighborhood, adjusting for covariates. The continuous quality of move score was created by subtracting Wave 1 neighborhood poverty from Wave 2 poverty. Each predictor variable was entered into the model individually; thus, no predictors were entered simultaneously.

Table 4

Unadjusted and Adjusted Logistic Regression Analysis Modeling Association Between Health Measures and Parent's Desire to Move (Some/Very Much Desire vs. No Desire) in the Total Sample (N=12,793)

Child-Reported Items	Model 1			Model 2		
	OR	95% CI	p-value	OR	95% CI	p-value
General Health Status						
Good/Very Good/Excellent	ref	ref		ref	ref	
Fair/Poor	1.32	1.16–1.51	<0.0001	1.23	1.06–1.42	0.006
Health-Related Absences from School						
None/Just a few	ref	ref		ref	ref	
Weekly to every day	1.26	1.06–1.49	0.008	1.26	1.04–1.52	0.02
Worst Injury						
Minor	ref	ref		ref	ref	
Serious	1.16	1.05–1.29	0.005	1.17	1.04–1.31	0.008
Physical Disability						
No	ref	ref		ref	ref	
Yes	1.15	0.91–1.45	0.25	1.21	0.93–1.56	0.16
Alcohol Use						
Never	ref	ref		ref	ref	
A Little	1.02	0.94–1.10	0.62	1.09	1.01–1.18	0.03
A Lot	1.11	0.97–1.27	0.14	1.17	1.01–1.36	0.04
Marijuana Use						
No	ref	ref		ref	ref	
Yes	1.25	1.11–1.40	0.0002	1.26	1.12–1.43	0.0002
Depressive Symptoms	1.38	1.24–1.54	<0.0001	1.35	1.12–1.51	<0.0001
# of Health Symptoms	1.02	1.01–1.03	0.001	1.02	1.01–1.04	0.0002
BMI	1.01	1.00–1.01	0.20	1.00	1.00–1.01	0.72
Parent-Reported Items						
# of Health Problems in Child						
0	ref	ref		ref	ref	
1	1.12	1.03–1.19	<0.0001	1.14	1.06–1.23	0.0008

Child-Reported Items	Model 1			Model 2		
	OR	95% CI	p-value	OR	95% CI	p-value
2 or more	1.29	1.16–1.43	0.006	1.31	1.89–1.46	<0.0001
# of Health Problems in Parents						
0	ref	ref		ref	ref	
1–2	1.11	1.01–1.24	0.04	1.17	1.04–1.31	0.007
3 or more	1.47	1.29–1.67	<0.0001	1.51	1.31–1.73	<0.0001
Parent Disability						
No	ref	ref		ref	ref	
Yes	1.20	0.99–1.45	0.07	1.03	0.81–1.32	0.79
Parent General Health Status						
Good/Very Good/ Excellent	ref	ref		ref	ref	
Fair/Poor	1.39	1.22–1.59	<0.0001	1.26	1.12–1.43	0.0002
Parent Alcohol Use						
Never	ref	ref		ref	ref	
A Little	1.16	1.05–1.29	0.005	1.25	1.13–1.39	<0.0001
A Lot	1.10	0.95–1.29	0.21	1.19	1.03–1.39	0.018
Parent Smoking						
No	ref	ref		ref	ref	
Yes	1.48	1.34–1.64	<0.0001	1.37	1.24–1.51	<0.0001
Child Mental or Physical Disability						
No	ref	ref		ref	ref	
Yes	1.37	1.24–1.51	<0.0001	1.35	1.21–1.51	<0.0001
Covariates						
Sex						
Female	ref	ref		ref	ref	
Male	1.00	0.93–1.07	0.97	1.01	0.94–1.08	0.84
Race						
White	ref	ref		ref	ref	
Black	1.62	1.36–1.94	<0.0001	1.71	1.45–2.02	<0.0001
Hispanic	1.14	0.97–1.35	0.10	1.09	0.94–1.26	0.27

Child-Reported Items	Model 1				Model 2			
	OR	95% CI	p-value		OR	95% CI	p-value	
Other	1.10	0.94–1.28	0.24		1.03	0.88–1.20	0.73	
Parent Welfare Receipt								
No	ref	ref			ref	ref		
Yes	1.62	1.33–1.96	<0.0001		1.45	1.21–1.74	<0.0001	
Parent Highest Education								
College or more	ref	ref			ref	ref		
Less than College	1.29	1.15–1.46	<0.0001		1.21	1.07–1.37	0.002	
Parent Highest Occupation								
Professional/Manager	ref	ref			ref	ref		
Technical/Office worker/Sales	1.26	1.13–1.42	<0.0001		1.17	1.05–1.31	0.006	
Service/Construction/Military	1.25	1.09–1.43	0.001		1.07	0.95–1.2	0.29	
Child Age (in years)	1.00	0.96–1.04	0.97		1.00	0.97–1.04	0.89	

Cell entries are odds ratios (exponentiated beta coefficients), 95% confidence intervals, and p-values. Model 1 examined the unadjusted association between child- or parent- reported health status measures on parent's desire to move (some or very much desire to move vs. no desire to move). Model 2 examined the association between child- or parent- reported health status measures on parent's desire to move, adjusting for covariates. In both models, each predictor variable was entered into the model individually; thus, no predictors were entered simultaneously.