

NIH Public Access

Author Manuscript

Am J Health Behav. Author manuscript; available in PMC 2015 March 01.

Published in final edited form as:

Am J Health Behav. 2014 March ; 38(2): 297–306. doi:10.5993/AJHB.38.2.15.

Daily Hassles' Role in Health Seeking Behavior among Lowincome Populations

Rebekah Jacob, MSW, MPH [Research Assistant],

Washington University in Saint Louis, School of Medicine, Division of Public Health Sciences, St Louis, MO

Lauren D. Arnold, PhD, MPH [Assistant Professor],

Saint Louis University, College of Public Health & Social Justice, Department of Epidemiology, Kansas City, KS

Jean Hunleth, PhD, MPH [Postdoctoral Scholar],

Washington University in Saint Louis, School of Medicine, Division of Public Health Sciences, St Louis, MO

K. Allen Greiner, MD, MPH [Professor], and

University of Kansas Medical Center, Department of Family Medicine, Kansas City, KS

Aimee S. James, PhD, MPH [Associate Professor]

Washington University in Saint Louis, School of Medicine, Division of Public Health Sciences, St Louis, MO

Abstract

Objectives—To adapt a daily hassles measure for a low-income population and assess the relationship between hassles and health seeking behavior.

Methods—The mixed methods approach used cognitive interviews (N = 23) to inform an adapted measure of daily hassles. The adapted scale was then tested via surveys (N = 144) in community health centers; multivariate logistic regression models were used to assess relationships among variables.

Results—Hassle concerning having enough money for emergencies (76.5%) and worrying about personal health (68.8%) were among the most common. Increased health-related hassles were associated with an increased likelihood to delay needed care.

Conclusions—Findings suggest daily hassles are unique among low-income populations and should be considered in health behavior interventions.

Keywords

daily hassle; delay care; health seeking behavior

Correspondence Dr James; jamesai@wudosis.wustl.edu.

Human Subject Statement: All study procedures and materials were approved by the university Institutional Review Board. **Conflict of Interest Statement**: The authors have no conflicts of interest to report.

Jacob et al.

Several hazardous health behaviors such as smoking, unhealthy diet, and physical inactivity are associated with negative health outcomes and are disproportionately prevalent among low income or other traditionally underserved pop-ulations.¹⁻⁴ Among these same populations, performance of preventive health behaviors is low and delay in seeking medical care is not uncommon.⁵⁻⁸ This contributes to poorer self-rated health, less frequent healthcare utilization, and poorer health outcomes in low-income populations.⁴ A large body of literature exists that highlights low income or low socioeconomic status (SES) as the "fundamental" contributor to health inequalities.^{9,10} Often, low-income, underinsured, and uninsured patients can find lower-cost care in a "safety-net" healthcare setting, health centers that primarily serve underinsured, Medicaid, and uninsured patients. However, whereas financial access to preventive health services may alleviate some of the barriers for low-income populations, studies in other countries show that even with universal health services free of charge, inequalities along the socioeconomic gradient persist in preventive health seeking behaviors and health outcomes.^{11,12} This adds to the complexity of determinants of health in low-income populations.

Although there are a number of factors related to screening behaviors in low socioeconomic status populations, stress, particularly that associated with SES, has been poorly studied in relation to preventive care. Literature has postulated that consideration of stressors and strains provides a contextual link among socioeconomic disadvantage, low levels of preventive health behaviors, and negative health outcomes. This literature^{6,13-16} suggests that people who experience socioeconomic disadvantage also experience higher frequencies of stressful events and have fewer resources to ameliorate this stress. This may include large-scale life events but also daily events that contribute to overall stress levels.

Measuring daily stress, or daily hassles, and understanding their impact on health is challenging, and many measures of hassles were developed in more economically advantaged populations. For example, the Daily Inventory of Stressful Events was initially introduced during the National Study of Daily Experiences in a population that was mostly white and had completed some college or higher education.¹⁷ Also, while shown to be a valid measure of daily stressors, the Daily Hassles scale was similarly developed and introduced in relatively advantaged populations with high education and income levels. Such measures may not capture hassles that are more commonly experienced by socioeconomically disadvantaged populations, such as finding resources for basic daily needs. Time and resources dedicated to struggling to meet basic needs may compete against those needed for things like preventive care. Thus, there is a need to examine these measures in socioeconomically disadvantaged populations to maximize their utility in understanding the association between hassles and health. Finding appropriate measures of hassles will be important in understanding how they interfere with preventive care and health maintenance and will help researchers identify strategies and targets for successful interventions, or to understand why previous interventions may have been less successful.

There are several potential explanations for how daily hassles can affect preventive health care. Some research suggests that individuals who continually face daily hassles or stress react more rapidly to situations ("reactive responding"), thus, reducing resources available for planning for the future or scheduling health activities such as cancer screening or seeking

other preventive health care.¹³ Others suggest that as SES decreases, stressors and demands (to meet basic needs) increase, creating a cycle of lacking adequate resources to deal with such life obstacles.¹⁴ Both of these propose that while individuals are busy attending to stressors or hassles, they are less likely to actively promote their own health. This concept is especially relevant to preventive health behavior performance, as there may not be acute "cues" (ie, symptoms) to place it higher than other priorities. The consequence is that after delay, services like screening may detect health issues at later, more advanced stages, which then require more personal time and resources to be addressed. Accordingly, identifying the hassles that impede timely screening, and helping individuals access care despite those hassles could lead to opportunities for prevention, earlier detection, and reduced burden from cancer.

In this formative mixed-methods multi-phase study, we sought to: (1) examine common daily hassles in a low income population to inform an adapted hassles scale measure and then (2) measure the relationship between common daily hassles and preventive health behavior performance as well as health status.

STUDY 1: Cognitive Interviews and Scale Modification

Method

Study design—To examine common daily hassles and their meaning, and to adjust an existing hassles scale for a very-low-income population, we conducted formative cognitive interviews (N = 23). We specifically focused on how respondents defined hassles, and on gathering recommendations for modifying items.

Sample recruitment—Participants in the cognitive interview study were recruited from a large urban community health center by distributing flyers and hanging informational posters about the study in the participating site. Study staff was stationed at a recruitment table in the health center main lobby on varying days and times to screen and enroll interested individuals. To be eligible, individuals had to speak English and be a patient of the participating health center. Because the parent study was focused on cancer screening, we restricted participation to those aged 40 years or older, the age at which average-risk individuals are recommended to begin routine screening for certain cancers.

Procedures—After individuals expressed interest in participating and were determined to meet eligibility criteria, they were given study information materials and provided informed consent. Cognitive interviews were administered by a trained interviewer at the participating health center. The interviewer read each survey question, allowed the participants to answer, and asked the participants about the relevance of the item and their thoughts and opinions about answering it. Interviews lasted approximately 30 to 45 minutes, and participants received a \$25 gift card for completion. Each interview was audio-recorded and transcribed verbatim.

Measures—We drew items for our hassles scale from the Hassles and Uplifts scale.¹⁸ We eliminated some items proactively (eg, hassles related to financial investment), anticipating

Analysis—Our objective in the analysis was to identify item-specific recommendations for changes to wording or for whether an item should be retained. Cognitive interview data were compiled and organized into responses to specific items. Multiple members of the research team (RR, KG, AJ) reviewed and compiled the responses to each item, focusing on responses related to comprehension, salience, and item appropriateness. We used consensus to decide whether or not to retain items. Interviews were stopped when we determined data were saturated in regard to whether items were appropriate or needed modification.

Results—Cognitive interview participants (N = 23) were mostly African-American (78.3%, N = 18) and male (60.9%, N = 14) between the ages of 40 and 73 (mean 50.67, SD=7.21). Half (N = 12) reported income less than \$800 per month, most of whom earned less than \$400 per month. More than half reported having health insurance (60.9%, N = 14). Table 1 describes the demographic characteristics of both Study 1 and Study 2 respondents.

Meaning of "hassles"—When asked, respondents offered several interpretations of what "hassle" meant to them. Common responses referred to extra stress, strains, inconvenience, and frustration. Respondents used words such as "problem," "worry," "trouble", and "aggravation" to describe what the term hassle meant to them. For example, one person explained that hassle "means something that is getting on my nerves. And just like, I'm steady worrying about it." Another respondent defined hassle by describing her current situation. She explained that she could no longer afford to pay her car insurance and was now taking the bus, which took longer and required advance planning: "Even though I left an hour before I had to, I still wound up late....So the things that I could have done in 20 minutes are now taking me as long as 2 hours to do, and it's driving me nuts. It's just driving me crazy." Another participant described it as, "like you trying to accomplish something but there's something blocking the way where you can get nothing." These definitions of hassles seemed consistent with the types of experiences reflected in our hassles items, which mostly included chronic occurrences rather than single acute events.

Item evaluation—Based on responses to the employment questions, we developed a new item about "finding work," as many participants in the setting were unemployed and, as one participant said, "[finding work has] been a problem." This reflects both the sample and the economic reality of the time of data collection. We left many items unchanged, as participants seemed content with the item and did not express difficulty answering them. One particular item that was dropped from the scale based on the interviews was a question about having money for "extras such as vacations or eating out." Common replies to this item were that "those [issues] aren't even on board" and that "The only people that don't have money for vacation are those who had money in the first place." One participant replied sarcastically, "You being funny. Yeah, we go to the Caribbean all the time," then concluded with a definitive and emphatic "No." Because the prevailing sentiment from participants was that the item was insensitive to individuals who had trouble affording basic necessities, it was dropped from the scale.

It is important to note that some respondents suggested that money for housing/utilities or food/clothing was not an issue because they received assistance from government or from family, such that the expense was not really a hassle: "I get help through...Section 8 [paying] my full rent. So ...none, I guess." However, a different participant commented, "That's why I'm staying with somebody else. Yeah. That's a hassle." These 2 statements suggest that "hassle" was defined differently by different participants.

Whether a situation was defined as a hassle reflected the participants' individual situations and the difficulty they encountered in navigating that life circumstance. We adjusted response categories to allow participants to state "not applicable" in addition to "not a hassle." This helped participants such as those who felt the family questions did not apply to their life (if they were without family or estranged from family) or who were on disability (so neither employment nor finding work questions applied).

We also asked participants how they interpreted the "how you would be treated" part of the delay of care item; participants overwhelming referred to attitudes and disrespectful comments by healthcare providers or staff.

STUDY 2: Quantitative Study of Hassles

Overview and Design

To assess level of hassles and health behaviors in a low-income population, we conducted a longitudinal survey study of patients (N = 144) at federally qualified health centers. Respondents were surveyed at baseline, 6 months, and 12 months. Hassles were assessed at baseline data collection, which is the focus of this analysis. The cognitive interview and health survey samples were recruited from different health centers and did not overlap.

Sample Recruitment

Survey participants were recruited from a network of federally qualified health centers by posting flyers in the main and ancillary waiting rooms and in the main lobby. Additionally, study staff members placed a table in the main lobby and were present multiple days per week to recruit individuals in person. To be eligible, individuals had to speak English and be a patient of a participating health center. Similar to the recruitment process for cognitive interviews, because the parent study was focused on cancer screening, we again restricted participation to those individuals age 40 years or older, for whom screening recommendations become more salient.

Survey Procedures

Interested eligible participants were escorted to a private area to obtain written informed consent and collect contact information for future follow-up. Participants were given the option to self complete surveys or have them administered by study staff; most surveys were administered by the interview staff. Baseline health surveys took approximately 30 to 45 minutes to complete, and participants received a \$15 grocery gift card upon completion.

Survey Measures

Dependent variables

Delay of needed care: Three items assessed whether individuals had delayed seeking needed medical care due to 3 reasons: cost, not having a way to get there (transportation), and how they thought they would be treated while there. Delay questions due to cost and transport were derived from the National Health Information Survey. Delay due to how one perceived they would be treated was based on these questions but informed by previous findings that concern about how providers interacted with patients sometimes kept patients from seeking care, and was supported by the Study 1 questions about the item.

Self-rated health: Self-rated health status was measured through a single question about self-perceived general health with Likert response options (excellent, very good, good, fair, poor) that is commonly used in national surveys such as the Behavioral Risk Factor Surveillance System.

Independent variables

Daily hassles: Hassles were measured using the items adapted through Study 1 presented above. A total of 18 items were included in the final scale used in the health surveys. The adapted scale was found to be internally reliable ($\alpha = .90$). Most hassles represented financial or health factors.

Demographic characteristics: Demographic measures were derived from national surveys such as the Behavior Change Consortium and National Health Interview Survey (NHIS). Measures included sex, age, race, ethnicity, years of education, monthly income, marital status, and employment status, as well as the length of current (un)employment. Other measures included to describe the study population included a measure of homelessness and was assessed by asking participants if they had ever spent 24 hours or more living on the streets or in a shelter.

Survey analysis—IBM SPSS v.20 was used for analysis of survey data. Descriptive and bivariate analysis using chi-square and t-tests were conducted to describe the study population and bivariate associations. The 18-item hassle scale was then summed to represent a continuum from less to more daily hassles experienced. The scale was stratified into 2 separate topic-based scales representing financial hassles (5 items, $\alpha = .80$) and health-related hassles (4 items, $\alpha = .63$). Self-rated health was collapsed into a dichotomous variable (Excellent/very good/good and fair/poor). Years of education were dichotomized into did not graduate high school and or a high school diploma/GED and/or higher education. Multiple logistic regression models were utilized to examine the relationship of hassles to delay in seeking medical care (due to cost, the way individuals would be treated, and due to transportation issues) and self-rated health. All models controlled for the influence of education level, sex, and insurance status. Results were considered statistically significant with a 2-tailed test at p < .05. Goodness of model fit was assessed and model assumptions were tested.

Results

Demographics

The survey sample included 144 adults age 40 and older. African Americans comprised the majority of the sample, representing 87.5% (N = 126) of the study population (Table 1). More than half of the respondents identified as male (61.8%, N = 89), and the majority were over the age of 50 (57.6%, N = 83). The sample was very low-income; nearly all (93%, N = 126) reported income < \$1200 per month (\$14,400/year), and 45.2% (N = 61) reported < \$400 earned per month (including disability and food stamps). Over one-third (36.1%, N = 52) did not have a high school diploma or GED. The majority of respondents were either unemployed (49.3%, N = 71) or disabled (29.9%, N = 43). At least one lifetime episode of homelessness was reported by 75% (N = 105) of the respondents. Over half of the sample (52.1%, N = 75) was without health insurance coverage at the time of the survey. Of the individuals with insurance, 79.3% (N = 65) had either Medicare or Medicaid. Fair/poor health was reported by most respondents (54.2%, N = 78).

Hassles distribution

Table 2 describes hassle items and responses. Among the most commonly reported hassles were having enough money for emergencies (76.5% answered 'somewhat' or greater, N = 104), taking care of or worrying about personal health (68.8%, N = 95), having enough money for food and clothing (68.6%, N = 96), having enough money for housing and utilities (68.4%, N = 93), and having enough money for healthcare, insurance, or medications (61.9%, N = 86). The least common hassle was providing financial care for someone outside of the home (32.4%, N = 45). The sum score of the full hassle scale had a mean of 15.73 (SD±10.44). The financial hassles (5 items) and health (4 items) sub scales had means of 6.54 (SD±4.45) and 3.88 (SD±3.10) respectively. Bivariate analysis showed no significant difference among hassles scores and sex, race/ethnicity, education level, or monthly income. However, those without insurance had significantly higher hassle scores (t(137)=3.34, p < .001). Table 3 provides the multiple regression results of hassles sub scales predicting delay of seeking care due to cost, treatment, and transportation issues and predicting very good self-rated health status.

Delays due to cost

Individuals with less than a high school diploma (OR = 0.39, 95% CI = 0.17, 0.88) and those without current health insurance (OR=0.27, 95% CI=0.12, 0.64) were less likely to have delayed needed care due to cost. Additionally, individuals who reported greater health hassles were more likely to delay due to cost (OR = 1.23, 95% CI = 1.06, 1.43). Sex and financial hassles were not significant predictors of delaying care due to cost.

Delays due to how one might be treated

We also examined delays in care due to the way individuals thought they would be treated. For concern about how one would be treated, health hassles were again associated with greater likelihood of delays in care (OR = 1.21, 95% CI = 1.01, 1.41), but financial hassles

were not. Education level, insurance status, and sex were not significant predictors of delay in seeking medical care due to the way individuals thought they would be treated.

Transportation

No hassles were significantly associated with delays in care due to transportation; education level, insurance, and sex were not associated with this delay.

Self-rated health

Similarly, only health hassles was a significant predictor of having at least a "good" self-rated health status. Greater hassles were associated with lower likelihood of "very good" self-rated health (OR = 0.81, 95% CI = 0.70, 0.93).

Conclusion

Individuals from traditionally medically underserved groups – ie, individuals with low income, underinsured or uninsured, or who identify as racial/ethnic minorities – experience substantial health disparities. These disparities can be partially explained by lower rates of preventive care or by delays in obtaining timely treatment. One possible explanation for lower rates of care is that these groups may face daily hassles that interfere with their ability to attend to preventive and other non-acute health related behaviors. We conducted a series of studies to explore hassles and healthcare utilization in a low-income population.

In our cognitive interviews (Study 1), we qualitatively evaluated an existing hassles scale and found that certain hassle items (such as having money eat out) were not relevant to a lower income population and that some prominent hassles (such as finding a job) were missing from the scale. Daily hassles may be different or exacerbated in populations with few resources. We also found that participants wanted to differentiate between something not being a hassle and it not being relevant to their current situation (this was most commonly encountered around family and work hassles). Thus, we modified items and response options to meet participant understanding and experiences. The implications of allowing people to differentiate between "not a hassle" and "not applicable" deserve further evaluation.

In the cross-sectional quantitative survey (Study 2), we explored the revised scale and found that many socioeconomically disadvantaged individuals, even those who access healthcare through the healthcare safety-net system, face hassles such as having enough money for emergencies, taking care of personal health, having enough money for food and clothing, and housing and utilities. Self-rated health status was lower among persons reporting multiple health hassles.

Higher reported hassles were associated with reporting delays in seeking or accessing healthcare. Socioeconomically disadvantaged adults may have daily stressors, hassles, or competing priorities that affect not only their ability to engage in health protective behavior(s) but also their willingness to do so. For example, in one international study, Cai et al¹⁹ found 46% of people who declined screening colonoscopy reported that lack of time was among the main reasons for refusal. Socioeconomically disadvantaged populations may

Jacob et al.

spend some of this valued time focused on the "hassle" of obtaining basic needs such as food, clothing and shelter. If they have employment, paid time off for procedures or medical visits may not be available. In a study of homeless individuals, Gelberg et al²⁰ found that individuals who reported frequent hassles securing basic or "subsistence" needs were more likely to delay obtaining needed medical care. Likewise, competing priorities for basic needs, such as welfare appointments or finding a job or housing have been shown to outrank healthcare appointment referrals.²¹ Helping individuals address these basic needs may help them improve healthcare utilization. An example where legal hassles and health have been recognized formally is through the development of Medical-Legal partnerships which aim to afford proper benefits and protections to primary care patients in an effort to improve health. Some legal needs such as food stamps, housing subsidies, and insurance access/benefits mirror the hassles reported by participants in our study and may add additional information to the context in which individuals seek preventive care.²² Studies have found multiple benefits to the interdisciplinary efforts found through Medical-Legal Partnerships.²³ Efforts to improve health and increase healthcare utilization amongst disadvantaged populations may first need to address some of these hassles and basic needs, such as adequate and safe housing, or access to transportation assistance, before time or resources can be devoted to getting preventive care.

Some of the most common hassles among health survey participants in our study involved having enough money for food, clothing, housing, utilities, and/or emergencies. Also common among health survey participants were hassles with taking care of one's health and having enough money for healthcare. We found that despite having some level of entrée into the health system (all respondents were recruited at community health centers), people reported hassles related to health, and these were associated with lower utilization of healthcare services. This has potential implications for overall health. Delayed care may result in or exacerbate multiple acute health conditions. When these individuals finally enter into the medical system, their most pressing health issues take priority, skewing focus toward acute rather than preventive care. This notion is consistent with Kushel et al's finding that patients who reported instability in housing (eg, difficulty paying for housing or utilities, etc.) and food insecurity (eg, not being able to pay for; worrying about not having enough) were more likely to have higher rates of acute health care utilization (eg, higher emergency department usage, higher rates of inpatient care and longer hospital stays).²⁴

When individuals present with multiple co-morbidities and/or in acute care outlets such as EDs, preventive care (eg, cancer screening) may be seen as "less pressing" by patients and their providers as demonstrated by various interventions to increase preventive care in such sectors.²⁵ Delaying care for any reason may worsen already existing health disparities when conditions are not treated until they have progressed to later, more severe, stages where complications are more likely, treatment is more challenging, and survivorship is lower.²⁶ Together, these results may, in turn, add to or worsen hassles regarding costs of healthcare, ability to work, manage one's health or healthcare, or the ability to get around as needed (common hassles reported among individuals in our study).

Whereas some preventive care is relatively easily and quickly addressed (eg, blood test for glucose, mammogram), others require a more substantial investment of time or resources.

An example of this is colorectal cancer (CRC) screening, often done with colonoscopy.²⁷⁻²⁹ CRC screening is a prime illustration of a preventive behavior that has great impact but has added challenges for low-resource patients. For example the cost of the preparation, time off from work, transportation, and the need to have someone accompany them to the procedure may cost far more than simply lost wages.³⁰ Arranging rides or even getting time off from work can be a challenge for many patients. Such extraneous costs may require active planning or sacrifices on the part of patients who are already having trouble covering their basic needs.

As seen in the results, this study showed that those with lower levels of education and those without insurance are actually less likely to delay needed care due to costs. This contrasts with traditional findings that suggest that being uninsured and having fewer years of education were associated with less utilization. However, several possible explanations for why contradicting results were found in our sample. First, our survey sampled from federally qualified health centers, which specifically serve those without insurance. Co-pays for those who are underinsured may be high, and sliding fee scales may even out some of the financial barriers for uninsured patients. Previous studies also suggest that even with the coverage of health insurance, health plans with high deductibles may be a deterrent to seeking needed care.³¹ Lastly, it is important to note that, of those in our study who did have health insurance, many had only Medicaid or Medicare coverage. Thus, whereas it may be expected that those who are not covered by insurance would be more likely to delay care because of costs, the associated medical care costs and situational costs (daily hassles) of very low-income adults who have some form of insurance likely contributed to our finding.

Limitations

Our study has several limitations. Specifically, our survey sample was relatively small and although the sample is unique - very low income, mostly male and largely African-American – the limited range of demographics reduces our ability to examine or infer any sociodemographic differences in hassles amongst these primary care patients. On the other hand, this is a unique population comprised of persons who are unlikely to be represented in many studies. They represent those groups experiencing some of the starkest disparities in health today. The focus of the overall study on cancer screening meant we limited our sample to adults age 40 and older. Younger adults not yet eligible for cancer screening may have different hassles and healthcare utilization patterns. Our sole recruitment through health centers is also a limitation, as these individuals are already seeking care at some level. The predominant hassles and associations may have been different had we recruited from a broader community-based sample to include larger variability in demographic makeup. Individuals who are not seeking any care may face more - or different - hassles. However, we do find it significant that even individuals who were reached through a health center reported substantial health related hassles and delays in care. Additionally, there may have been additional hassles or nuances to hassles that were not captured by our study, as we started with an existing measure rather than a *de novo* exploration of hassles.

Despite these limitations, our study makes several important contributions to the literature. First, this is one of the first efforts to refine the hassles items to be more appropriate for a

low-income urban population, identifying critical hassles that participants felt affected their day-to-day living. Second, our study highlights that healthcare is accessed within a context of other life challenges and hurdles, such as trying to pay for basic necessities, which in turn has the potential to affect preventive health behaviors like cancer screening. We found that daily hassles with health are associated with delaying care both because of the costs associated with care and because of the way individuals felt they would be treated, which can contribute to population-wide health disparities. Financial hassles were common, but not strongly associated with health care seeking. This may be due to their overwhelming prevalence in our sample (nearly 70% reported that having money for food was a hassle). Third, overall, these findings suggest that people who experience more hassle with worrying about their health and obtaining healthcare are more likely to have poor health in turn creating a cycle of poor health and hassle with interactive effects. This has potential to inform intervention efforts. Researchers interested in increasing appropriate healthcare utilization such as preventive care in underserved populations should consider the life context and hassles of the patients with whom they are working and the difficult choices many individuals make when deciding what efforts and resources to put toward medical care even when they recognize the health benefits of doing so. Further developmental work is required to measure hassles and how they relate to healthcare utilization.

Acknowledgments

Funding for this study was provided from the American Cancer Society (MRSGT 06-084-CPPB, PI: James). Portions of investigator time were supported by the Barnes-Jewish Hospital Foundation and the Program for the Elimination of Cancer Disparities (U54CA153460; PI: G. Colditz). This project was also supported in part by the Kansas Communities Cancer Disparities Network Grant (U54CA154253; PI: Greiner). The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health or the American Cancer Society. We would also like to thank the health centers who made recruiting for the study possible and for the study participants for their time and input.

References

- Adler NE, Boyce WT, Chesney MA, et al. Socioeconomic inequalities in health. No easy solution. JAMA. 1993; 269(24):3140–3145. [PubMed: 8505817]
- 2. Adler NE, Ostrove JM. Socioeconomic status and health: what we know and what we don't. Ann N Y Acad Sci. 1999; 896:3–15. [PubMed: 10681884]
- Winkleby MA, Jatulis DE, Frank E, Fortmann SP. Socioeconomic status and health: how education, income, and occupation contribute to risk factors for cardiovascular disease. Am J Public Health. 1992; 82(6):816–820. [PubMed: 1585961]
- Lantz PM, House JS, Lepkowski JM, et al. Socioeconomic factors, health behaviors, and mortality: results from a nationally representative prospective study of US adults. JAMA. 1998; 279(21): 1703–1708. [PubMed: 9624022]
- 5. Coburn D, Pope CR. Socioeconomic status and preventive health behavior. J Health Soc Behav. 1974; 15(2):67–78. [PubMed: 4459422]
- Wardle J, McCaffery K, Nadel M, Atkin W. Socioeconomic differences in cancer screening participation: comparing cognitive and psychosocial explanations. Soc Sci Med. 2004; 59(2):249– 261. [PubMed: 15110417]
- McCaffery K, Wardle J, Nadel M, Atkin W. Socioeconomic variation in participation in colorectal cancer screening. J Med Scree. 2002; 9(3):104–108.
- Shi L, Stevens GD. Vulnerability and unmet health care needs. The influence of multiple risk factors. J Gen Intern Med. 2005; 20(2):148–154. [PubMed: 15836548]

- 9. Link BG, Phelan J. Social conditions as fundamental causes of disease. J Health Soc Behav. 1995:80–94. Spec No. [PubMed: 7560851]
- Phelan JC, Link BG, Tehranifar P. Social conditions as fundamental causes of health inequalities: theory, evidence, and policy implications. J Health Soc Behav. 2010; 51(Suppl):S28–S40. [PubMed: 20943581]
- Weller D, Coleman D, Robertson R, et al. The UK colorectal cancer screening pilot: results of the second round of screening in England. Br J Cancer. 2007; 97(12):1601–1605. [PubMed: 18026197]
- Katz SJ, Zemencuk JK, Hofer TP. Breast cancer screening in the United States and Canada, 1994: socioeconomic gradients persist. Am J Public Health. 2000; 90(5):799–803. [PubMed: 10800435]
- von Wagner C, Good A, Whitaker KL, Wardle J. Psychosocial determinants of socioeconomic inequalities in cancer screening participation: a conceptual framework. Epidemiol Rev. 2011; 33(1):135–147. [PubMed: 21586673]
- 14. Adler NE, Snibbe AC. The role of psychosocial processes in explaining the gradient between socioeconomic status and health. Curr Dir Psychol Sci. 2003; 12(4):119–123.
- Kotwal AA, Schumm P, Mohile SG, Dale W. The influence of stress, depression, and anxiety on PSA screening rates in a nationally representative sample. Med Care. 2012; 50(12):1037–1044. [PubMed: 22955835]
- Coker AL, Bond SM, Pirisi LA. Life stressors are an important reason for women discontinuing follow-up care for cervical neoplasia. Cancer Epidemiol Biomarkers Prev. 2006; 15(2):321–325. [PubMed: 16492923]
- Brantley PJ, Waggoner CD, Jones GN, Rappaport NB. A Daily Stress Inventory: development, reliability, and validity. J Behav Med. 1987; 10(1):61–74. [PubMed: 3586002]
- DeLongis A, Folkman S, Lazarus RS. The impact of daily stress on health and mood: psychological and social resources as mediators. J Pers Soc Psychol. 1988; 54(3):486–495. [PubMed: 3361420]
- Cai SR, Zhang SZ, Zhu HH, Zheng S. Barriers to colorectal cancer screening: a case-control study. World J Gastroenterol. 2009; 15(20):2531–2536. [PubMed: 19469005]
- Gelberg L, Gallagher TC, Andersen RM, Koegel P. Competing priorities as a barrier to medical care among homeless adults in Los Angeles. Am J Public Health. 1997; 87(2):217–220. [PubMed: 9103100]
- Schlossstein E, Clair P, Connell F. Referral keeping in homeless women. J Community Health. 1991; 16(6):279–285. [PubMed: 1774344]
- 22. Sandel M, Hansen M, Kahn R, et al. Medical-legal partnerships: transforming primary care by addressing the legal needs of vulnerable populations. Health Aff. 2010; 29(9):1697–1705.
- Kushel MB, Gupta R, Gee L, Haas JS. Housing instability and food insecurity as barriers to health care among low-income Americans. J Gen Intern Med. 2006; 21(1):71–77. [PubMed: 16423128]
- Pettiagnano R, Bills LR, Caley SB, McLaren S. Can access to a medical-legal partnership benefit patients with asthma who live in an urban community? J Health Care Poor Underserved. 2013; 24(2):706–717. [PubMed: 23728038]
- Tarasenko YN, Schoenberg NE, Bennett KL. The Emergency department as a potential intervention recruitment venue among vulnerable rural residents. J Prim Care Community Health. 2011; 2(2):77–81. [PubMed: 21572931]
- 26. American Cancer Society. Cancer Facts & Figures 2012. Atlanta. 2012
- Shapiro JA, Klabunde CN, Thompson TD, et al. Patterns of colorectal cancer test use, including CT colonography, in the 2010 National Health Interview Survey. Cancer Epidemiol Biomarkers Prev. 2012; 21(6):895–904. [PubMed: 22490320]
- Whitlock EP, Lin JS, Liles E, et al. Screening for colorectal cancer: a targeted, updated systematic review for the U.S. Preventive Services Task Force. Ann Intern Med. 2008; 149(9):638–658. [PubMed: 18838718]
- 29. Levin B, Lieberman DA, McFarland B, et al. Screening and surveillance for the early detection of colorectal cancer and adenomatous polyps, 2008: a joint guideline from the American Cancer Society, the US Multi-Society Task Force on Colorectal Cancer, and the American College of Radiology. Gastroenterology. 2008; 134(5):1570–1595. [PubMed: 18384785]

- Jonas DE, Russell LB, Chou J, Pignone M. Willingness-to-pay to avoid the time spent and discomfort associated with screening colonoscopy. Health Econ. 2010; 19(10):1193–1211. [PubMed: 19725018]
- Kullgren JT, Galbraith AA, Hinrichsen VL, et al. Health care use and decision making among lower-income families in high-deductible health plans. Arch Intern Med. 2010; 170(21):1918– 1925. [PubMed: 21098352]

Table 1
Demographic Characteristics for Study 1 and Study 2 Participants

Characteristics	Study 1 Cognitive Interview (N = 23)	Study 2 Health Survey (N = 144)
	% (N) ^a	% (N)
Sex		
Male	60.9 (14)	61.8 (89)
Female	34.8 (8)	38.2 (55)
Age^b	50.67 (7.21)	50.95 (6.73)
Racial Composition		
White non-Hispanic	4.3 (1)	11.8 (17)
Black/African-American	78.3 (18)	87.5 (126)
Other	8.7 (2)	0.07 (1)
Monthly Income <\$400	34.8 (8)	45.2 (61)
% Employed	26.1 (6)	13.9 (20)
Ever homeless	unknown ^C	75.0 (105)
Education		
<hs diploma="" ged<="" td=""><td>8.7 (2)</td><td>36.1 (52)</td></hs>	8.7 (2)	36.1 (52)
HS diploma/GED or higher	73.9 (17)	62.5 (90)
Marital Status		
Married/with partner	26.1 (6)	15.3 (22)
Separated/Divorced	30.4 (7)	37.5 (54)
Never Married	26.1 (6)	39.6 (57)
Widowed/other non-married	13.0 (3)	7.6 (11)
% Without Insurance Coverage	39.1 (9)	51.1(75)
% on Medicaid/Medicare	unknown	45.1 (65)
Self-rated Health Status Fair/Poor	unknown	54.2 (78)
Delayed Care		
Due to cost	43.5 (10)	46.2 (66)
Due to way would be treated	17.4 (4)	24.5 (35)
Due to no way to get there	unknown	28.7 (41)
Have Regular Source of Healthcare	82.6 (19)	85.3 (122)

Note.

 $^{a}\mathrm{Percentages}$ may not equal 100% with some missing responses.

 $^b\mathrm{Age}$ presented as mean and standard deviation (SD).

^CQuestion did not appear in Study 1 interview.

Table 2
Frequency of Response to Hassles Items from Health Survey Participants (N = 144)

	Total reporting as $hassle^a$, % (N)
Health Hassles	
Taking care of or worrying about your health ^{b}	68.8 (95)
Having enough money for healthcare, insurance, or medications b	61.9 (86)
Your physical abilities to function and get around	51.8 (72)
Obtaining medical care	51.1 (70)
Financial Hassles	
Having enough money for emergencies	76.5 (104)
Having enough money for food, clothing, etc.	68.6 (96)
Having enough money for housing and utilities b	68.4 (93)
Financial care for someone who does not live with you	32.4 (45)
Employment Hassles ^C	
Finding work ^b	52.3 (67)
Worrying about keeping job ^{b}	24.0 (12)
Coworkers, supervisors, or employees ^a	15.7 (8)
The nature of job^b	11.8 (6)
Family Hassles	
Health of family member	45.0 (63)
Family-related obligations	40.4 (55)
Additional Hassles	
Neighborhood or housing situation	57.0 (77)
Personal Safety ^b	42.3 (58)
Discriminated against, talked down to ^{b}	40.4 (55)
Taking care of paperwork	39.6 (55)

Note.

^aPercentage based on valid responses reporting at least somewhat of a hassle.

 ${}^{b}\mathrm{Denotes}$ the question was added or modified from the original Hassles scale.

 c Employment questions had low response rates as a very small number (N = 20) were employed.

Table 3

Logistic Regression Model Results for Delay in Seeking Medical Care (Due to Cost, Treatment, and Transportation Challenges) and a High Self-rated Health Status

	Delayed	l care: cost	Delayed c	are: treatment	Delayed	care: transport	Health sta	tus: very good
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Control Variables								
Education level	0.39^*	0.17-0.88	0.78	0.33- 1.84	0.82	0.37- 1.82	1.93	0.90- 4.15
Insurance Status	0.27^{***}	0.12-0.64	1.87	0.75- 4.69	1.45	0.63- 3.35	0.53	0.24-1.19
Sex	0.66	0.29- 1.50	0.72	0.31- 1.69	1.28	0.58-2.86	0.54	0.25- 1.15
Hassles								
Financial hassles	1.06	0.95-1.18	1.10	0.97- 1.24	1.05	0.94-1.16	1.00	0.90-1.10
Health hassles	1.23^{**}	1.06- 1.43	1.21^{**}	1.04- 1.41	1.16	1.01-1.34	0.81^{**}	0.70- 0.93
Valid cases		137		137		137		137
Psuedo a r ²	0	.319	0	0.179		0.096	0).161
χ^2 (<i>df</i>)	37.41	l (5) ^{***}	17.5	57 (5)**		9.52 (5)	17.5	59 (5) ^{**}
* p < .05,								
** p < .01,								
*** p < .001								
Note.								
^a Nagelkerke pseudo r	5							