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The Vulnerability of Older Middle Age and Elderly Adults in a Multi-Ethnic, Low Income Area: Contributions of Age, Ethnicity, and Health Insurance

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Abstract

This community partnered study was developed and fielded in partnerships with key community stakeholders, describes age and race-related variation in delays in care and preventive service utilization among middle-aged and older adults living in South Los Angeles. The survey sample included adults ages 50 years and older who self-identified as African-American or Latino and lived in zip-codes of South Los Angeles (N=708). Dependent variables were self-reported delays in care and use of preventive services. Insured participants ages 50–64 years were more likely to report any delay in care (adjusted predicted percent (APP) 18%, 95% CI 14, 23) and problems getting needed medical care (APP 15%, 95% CI 12, 20) than those ages 65 years or older. Uninsured participants ages 50–64 years reported even greater delays in care (APP 45%, 95% CI 33, 56) and problems getting needed medical (APP 33%, 95% CI 22, 45) and specialty care (APP 26%, 95% CI 16, 39) than those age 65 and over. Compared to older participants, those age 50–64 years were generally less likely to receive preventive services, including influenza or pneumococcal vaccines and colonoscopy, but women were more likely to receive mammograms. Persons ages 50–64 years had more problems obtaining recommended preventive care and faced more delays in care than persons age 65 years and older, particularly if uninsured. Providing insurance coverage for this group may improve access to preventive care and promote wellness.

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Keywords

preventive services; delays; community based participatory research; insurance

INTRODUCTION

Racial/ethnic, socio-economic, and access-related disparities exist in healthcare utilization for middle age adults and throughout the lifespan.^{1–3} Low income older minorities, such as those in South Los Angeles, California, face poorer access to healthcare for many reasons, including lack of health insurance, higher out-of-pocket costs, transportation difficulties and fewer community resources.^{4–9} The pre-Medicare population may experience greater challenges when changes occur in the economy and healthcare services are eliminated. At least one quarter of older adults and more in low-income areas, will be uninsured at some point during the years preceding eligibility for Medicare.^{10,11}

However, after the closure of the major urban hospital in South Los Angeles, a low-income area located in the metropolitan center of Los Angeles County, multiple community stakeholders were interested in learning how to address the needs of the older and potentially more vulnerable population. Rarely have communities set research priorities to understand the impact of hospital closures and inform ongoing efforts to restructure healthcare services. Martin Luther King Jr. Hospital, provided emergency care, specialty care and inpatient services for uninsured and Medicaid populations spanning a four decade time period.

Even without the hospital closure, South Los Angeles has long faced the dual challenges of high disease burden and low availability of health care services. Compared to other areas in Los Angeles, this community has higher rates of diabetes, hypertension, HIV/AIDS and higher mortality from preventable or treatable conditions such as heart disease, stroke and lung cancer.¹² In addition, the hospital closure occurred in a community with persistently low physician supply may exacerbate challenges in accessing age-appropriate services.¹³ To add to these challenges, older adults have been severely impacted by the current economic downturn, with loss of employment and loss of health insurance,^{14,15} and this impact may have been amplified in minority communities.

As part of a community based participatory research project designed to address the health care needs of middle-aged and older residents of South Los Angeles and to understand the role of age and health insurance in delays in care and preventive service use, we conducted a survey of persons ages 50 years and older in the community. We compared differences in assessments between three groups: those age 65 years and older and those ages 50–64 years with and without insurance. The survey was designed to inform ongoing efforts focused on improving access to healthcare for older African Americans and Latinos in this part of Los Angeles County.

METHODS

Sampling and Survey Design

The study protocol and survey were developed with input from local leaders and residents of South Los Angeles. Community based participatory research is a collaborative method that equitably involves all partners in the process, recognizes unique strengths that each brings, begins with a research topic of importance to the community, with an overall goal to improve health outcomes and eliminate health disparities.¹⁶

Community stakeholders, including community advocates, university officials and private healthcare sector representatives, identified key areas of concern. We then used a consensus building approach to identify principle survey domains and questions. The community-based telephone survey was developed using previously validated survey measures wherever possible from surveys administered in this area. The survey questions were translated into Spanish using independent forward and back translation. The survey was pretested by telephone administration using a sample selected by geographic areas among those participants who fulfilled the study inclusion criteria. A total of 10 Spanish and 10 English pre-test interviews were performed.

Our study focused on African Americans and Latinos ages 50 years and older because more than 95% of South Los Angeles residents self-identify as such and more than half of all safety net clinic visits in this community are by people over age 50 and older.¹⁷ The sample was randomly selected from all listed household phone numbers most likely to be within South Los Angeles zip codes based on all available sources by SDR Sampling Services (Atlanta, GA). Twenty South Los Angeles zip codes were part of our study area and are defined by Los Angeles County Department of Health Services as Los Angeles County Service Planning Area (SPA) 6. Based on U.S. Census demographics, using South Los Angeles zip codes would also allow us to target respondents' geographic and racial/ethnic distribution. To be included in the survey, respondents had to be 50 years or older, identify themselves as African American or Latino, and indicate a language preference of English or Spanish. Call attempts were made up to 15 times at different times of the day and different days of the week. All telephone numbers were classified into standard telephone survey categories, including known household, non-working numbers, and fax lines. We mailed a \$2 incentive to increase participation mid-way through the 5-month study protocol to potentially eligible households who had not yet completed the survey. We obtained an IRB addendum to conduct this mailing. Household addresses were obtained using multiple sources, including reverse directory services for phone numbers that had been called at least once. Data collection was concluded after obtaining a 60% response rate.

The survey was completed by 708 participants representing 55% of contacted telephone numbers (ineligible and refused). If eligibility rates were similar among participants we could not reach, the response rate among eligible participants would be 63% (7.1% refusal rate; 93% cooperation rate).¹⁸ For participants who consented, trained interviewers completed the survey either with computer-aided telephone interviewing system or via paper and pencil. Full details of survey data collection and responses are included in Figure 1 with more detail in Supplement 1. The RAND Corporation Institutional Review Board approved the study protocol.

Outcome Variables

Two outcome measures were assessed: delays in care and use of preventive care (Supplement 2). Respondents were asked about delays in care (dichotomized into any delay vs. none), any problem in receiving needed medical care (dichotomized into any problem vs. no problem), and any problem in receiving needed specialty care (dichotomized into any problem vs. no problem). Four specific preventive measures were assessed: 1) flu shot in the past 12 months (yes or no), 2) ever had a pneumonia shot (yes or no), 3) colonoscopy in the past 10 years (yes or no); among women, 4) mammogram in the past 24 months (yes or no). For pneumococcal vaccination, we included those ages 65 and older in addition to those ages 50–64 years who had a clinical indication, including diabetes, chronic lung disease, and asthma.¹⁹

Independent Variables

The independent variables selected were based on a conceptual framework modified from the Andersen Model of Access to Healthcare for Low-income Populations.²⁰ The model incorporates the predisposing characteristics that exist prior to the perception of illness (e.g. race, education, age), enabling resources that facilitate or impede health service utilization (e.g. health insurance, poverty), and the need variables pertaining to physical illness. We used self-reported measures for model covariates that included pre-disposing factors (age, race/ethnicity, gender), enablers (insurance, poverty), and individual need (chronic conditions). Since our study sample over age 65 was largely insured, we created an age/insurance combination variable with three groups: those ages 50–64 years with insurance, those age 50–64 years old without insurance, and those ages 65 years and over, excluding those who were uninsured (N=10). Creating the three age by insurance categories and limiting the data set avoided collinearity of these two variables. We used self-identified race/ethnicity information categorized into two mutually exclusive groups: non-Latino African-American, and Latino. Mixed race individuals were excluded from analysis (N=1). In addition, we obtained information about the presence or absence of chronic conditions, including diabetes, hypertension, asthma, lung disease, and arthritis. Our study used self-reported household income and size to calculate poverty level (based on 2008 Federal Poverty Level Guidelines) and created a dichotomous poverty status variable (above 100% or below 100% federal poverty level).²¹

Analysis

The survey sample had 13% missing data for poverty. A non-negligible proportion, and up to one-third of respondents in most large population-based surveys, has missing income information.^{22,23} Prior to running the analyses, we imputed missing poverty data using multiple imputation methods with SAS PROC MIanalyze using race and age as predictors. All other variables had less than 4% missing values. Next, we created survey weights from census-level data on race, poverty, and age and applied weights to the data, similar to studies conducted in this area.²⁴

We then conducted bivariate analyses of each independent variable (50–64 years with insurance, 50–64 years without insurance, and ≥65 years) with each outcome. Logistic regression models were constructed to test associations between the independent variables and reported delay in care and each preventive service. We present the associations as differences among age/insurance combination categories in predicted percentages of having a delay in care or receiving preventive services, and their statistical significance was determined by simulating 95% confidence intervals for the differences. Using the multivariate logistic regression model, we empirically tested our independent variables in predicting outcomes of delays in care and preventive service use. However, both raw logistic regression coefficients and odds ratios are nonlinear expressions of the impact of individual covariates on the outcome variables, so we have presented the findings as predicted percentages to show the individual marginal effects of each covariate on our outcome variables.

To evaluate interaction effects for whether age effects on delays in care and preventive service use had similar magnitudes for subjects with chronic conditions, we tested age-by-presence-of-chronic-conditions interaction terms in the models. All analyses were performed with SAS statistical software (version 9.1.3, SAS Institute Inc., Cary, NC, USA).

RESULTS

Sixty-one percent of the study sample was female, 60% African-American, 64% were ages 65 years and over, and 80% of Latinos conducted the survey in Spanish (Table 1). Fifty percent of participants had high school education or less; 32% were under the federal poverty level; and 10% were uninsured. Latinos composed 77% of those 50–64 years old who were uninsured compared with 40% in the total sample, 42% in the 50–64 year old sample, and 31% of those in the 65 year and older sample.

In unadjusted analyses, those over age 65 years had fewer reported problems receiving needed medical care than the younger groups (Table 1). Adults ages 50–64 years without insurance were more likely to report any delay or problems receiving needed medical or specialty care, but insured 50–64 year olds were also more likely to report any delay and problems receiving needed medical care compared to the older group. African Americans and Latinos age 65 years and older had higher rates of reported influenza and pneumococcal vaccinations and colonoscopy compared to both insured and uninsured younger cohort. Receipt of mammograms did not follow patterns for other preventive services, and was reported more often by insured younger women than women over age 65 years.

In multivariate analyses adjusted for the predisposing, enabling and need variables, participants ages 50–64 years without insurance were most likely to report delays in care, followed by those ages 50–64 years with insurance and then those 65 years and older (Table 2). Compared to both their younger insured and uninsured counterparts, those age 65 years and older had lower rates of reported delays in care (adjusted predicted percentages [APP], 8% v. 18% v. 45%, respectively) and problems receiving needed medical care (APP 7% v. 15% v. 33%).

Preventive service use also differed among the three age/insurance status groups. Vaccination rates were low among all three groups. Compared to both their insured and uninsured younger counterparts, the older group had significantly higher rates of influenza vaccination (APP 58% v. 45% v. 33%) and colonoscopy (APP 69% v. 52% v. 27%). Patterns were similar for pneumococcal vaccination, but for those uninsured 50–64 years of age who had a clinical indication for vaccination were significantly lower than rates among those ages 65 and older. Patterns of receipt of mammogram again diverged from the other preventive services, with significantly higher rates among those insured ages 50–64 years.

Gender, race/ethnicity, income and chronic disease were also associated with differences in delays in care and preventive service use (Table 2). Women had higher rates of problems receiving needed medical care and colonoscopy than men. Latinos had higher rates of flu vaccination and lower rates of colonoscopy than African Americans. Respondents under the federal poverty level reported higher rates of problems seeing a specialist. Those with chronic disease, particularly two or more, had higher rates than those without chronic disease of any reported delays, and higher preventive care use for influenza and pneumococcal vaccination and mammography.

Finally, the interactions between age-by-presence of-chronic-condition interaction terms were not statistically significant.

DISCUSSION

Among middle-age and older adults in South Los Angeles, we observed higher levels of reported delays and variation in these outcomes by age, race and insurance status. Independent of insurance status, persons 50–64 years of age reported more delays in care and problems receiving needed medical care compared to those over age 65 years. The

differences in delays and receipt of preventive care were even larger among those who were younger and uninsured.

An important feature of this work for our community stakeholders was the ability to benchmark study results with established national targets for delays in care and preventive service use. Compared with Healthy People 2010 (HP2010) national targets for delays in access to care (< 7%), the rates in our study were more than double for insured adults ages 50–64 years, and more than six-fold greater uninsured adults ages 50–64 years.²⁵ The rates reported by both insured and uninsured adults in the younger group fall far short of the HP2010 national objectives and far below the expectations of community stakeholders.

As in prior studies, we found those who are middle-aged without insurance are a high risk-group for delays in care and problems receiving needed medical care.^{8,26} However, our findings underscore that adults ages ≥65 years and older reported problems getting needed medical care that were greater than expected for this population. This is consistent with studies that suggest that Medicare coverage decreases but does not eliminate racial, ethnic, and socioeconomic health disparities in this age group.^{9,27–31} Older minorities who are uninsured and subsequently enroll in Medicare may have greater morbidity, greater health decline and, therefore, require more intensive and costly care after enrollment in the program.^{32,33} Our findings reinforce the importance of insurance in our urban African American and Latino study sample, but identify potentially remediable gaps in preventive service use when compared to Healthy People 2010.

HP 2010 objectives have also identified target rates for vaccination and preventive care that can be used for community program and intervention planning.²⁵ For South Los Angeles residents, the adjusted rate of influenza vaccination was not above 60% for any group, compared to the HP2010 goal of 90%; for those who reported having a pneumococcal vaccine, the vaccination rate was less than 50% for all groups compared to the HP2010 goal of 90%. We observed rates of influenza vaccination higher than CDC reported national rates of 30% for non-Latino African Americans and Latinos for those ages 50–64 years, but still far from the goal set in HP2010. Additionally, the rates for both influenza and pneumococcal vaccination among those who are insured and age 65 years and older were still far from the targeted goals.

Future community based participatory research studies should examine the reasons for delays in care and lower use of preventive services. Our community partners suggested several reasons for our findings, and identified areas for future investigation. Our partners thought that delays in care may be due to lack of transportation, competing demands for time and money, and difficulty with accessing specialty services in our older population. To address these delays in care, community partners wanted to examine the capacity of the healthcare system to deal with older patients with chronic diseases in this community. Community partners thought that decreased preventive service use was linked to service availability, but additional issues remain in understanding the importance of certain services and overcoming distrust for immunizations. Our partners proposed the creation of a community action plan that would be dual-pronged to: 1) improve health education and outreach and 2) examine the capacity of the healthcare system for appointments, care coordination and education. Some specific suggestions included providing immunizations and colon cancer screening in a mobile van setting to build on the success of mobile mammography. Other partners wanted to have older residents educate other older persons about the importance of getting timely care and preventive screening. This work is one example of how communities can address healthcare needs and share their voice in research agendas. Other communities can use this study as a model for approaching joint problem solving through identifying needs and vulnerabilities for older populations.

Despite low vaccination rates, this South Los Angeles cohort has generally high mammogram and colon cancer screening rates that are approaching or exceeding HP2010 goals. The HP2010 goals are set at 75% for mammography compared to impressively high rates in our study at over 90%. Ongoing breast cancer screening efforts should continue to focus on uninsured populations. For colonoscopy, our study demonstrates rates of screening at almost 70%, where national rates are often less than 40 % and HP 2010 sets goals of 50%.^{34,35} We distinguished different patterns in vaccination and cancer screening between both the late middle aged and elderly.

The success in cancer screening may potentially shed light on important local interventions. Future efforts should be directed at exploring the differences in community perception between vaccination and mammography to develop targeted outreach interventions. Effective community based breast cancer screening targets uninsured and low-income women through mammogram mobile clinics and media campaigns. These results could inform future combined interventions for vaccination or other cancer screening promotion efforts.

Our study has three key limitations. First, participants were recruited from one area of Los Angeles County, South Los Angeles, a community that recently faced the closure of a major urban public hospital. Our survey was performed after hospital closure and may represent a vulnerable and transient period in time. Thus, these findings may not generalize to other low income areas nor can we make inferences about the role of hospital closure from this cross-sectional design. Through our community based research methodology, we focused on measures important to community stakeholders. Second, by using a random sample of households with listed phone numbers, we may have oversampled those age 65 years and older who are retired, or younger persons who are unemployed or disabled. Finally, delays and the use of preventive services were obtained by self-report and not by chart review, which could have introduced recall. To mitigate these biases, however, we used previously tested measures that have been developed to limit these methodological challenges.²⁴

As the numbers of uninsured decline after health reform implementation, focusing on those uninsured in middle age may be an important population for insurance expansion. These findings underscore the potential for future reductions in delays in care and increases in receipt of preventive services that may result from expansions of insurance coverage. As insurance coverage expands, visit and prescription co-pays may increase and cause further strain on older populations. Future opportunities for cost savings may also be captured through improved screening and disease prevention.³⁶ Ongoing efforts to develop a community-based integrated care network³⁷ may be able to address these concerns as community stakeholder plan to re-open the closed Martin Luther King Hospital.

CONCLUSION

Independent of insurance status, African Americans and Latinos in late middle age are much more likely to experience delays in care and have lower reported use of several preventive services in South Los Angeles than older, insured adults. As efforts to increase health insurance are implemented, it will be important to consider expanding Medicare eligibility as one strategy to improving preventive care among vulnerable and at-risk older adults.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Study Sample

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Table 1
Unadjusted, Unweighted Percentages for Demographic, Clinical and Self-Reported Measures by

Unweighted total (n)	Overall (%) N=696	≥65 yrs. (%) n=351	50–64 yrs With insurance (%) n=272	P	50–64 yrs Without insurance (%) n=73	P
Gender						
Female	61	64	57	.06	62	.69
Race/ethnicity						
African American	60	69	58	.005	23	<.0001
Latino	40	31	42		77	
Language						
English	69	77	69	.02	27	<.0001
Spanish	31	23	31		73	
Education						
High School or less	50	50	55	.26	74	.0003
Some College or higher	50	50	45		26	
Income as Percent of Federal Poverty Level						
0–99% FPL	32	28	35	.07	41	.03
100+ FPL	68	72	65		59	
Self reported Health						
Excellent/Very Good/Good	65	63	68	.20	67	.47
Fair/Poor	35	37	32		33	
Chronic Conditions						
Arthritis	43	51	38	.001	22	<.0001
Asthma	12	12	14	.41	7	.21
Diabetes	28	29	26	.36	29	.94
Heart Disease	16	21	10	.0003	8	.01
High Blood Pressure	64	75	54	<.0001	48	<.0001
Delays (Yes/No)						
Reported any delay in care	15	9	17	.008	39	<.0001
Problem seeing a specialist	24	20	25	.16	44	.0007

Unweighted total (n)	Overall (%) N=696	≥65 yrs. (%) n=351	50–64 yrs With insurance (%) n=272	P	50–64 yrs Without insurance (%) n=73	P
Problem receiving needed medical care	22	16	26	.003	44	<.0001
Preventive Need (Yes/No)						
Had flu shot, past year	49	57	43	.0006	34	.0004
Mammogram, past 2 years	84	81	90	.01	78	.63
Ever had a pneumococcal vaccine	34	48	20	<.0001	16	<.0001
Had a colonoscopy, past 10 years	57	68	52	<.0001	21	<.0001

Age and Insurance Status from 2008 Survey of Older Minorities in South Los Angeles

Note: Comparison between 65 years and older group and the other age by insurance groups as assessed by χ^2 tests; Pneumococcal vaccination assessed for those with a clinical indication, including diabetes, chronic lung disease and those age 65 and older.

Table 2

Predicted Percentages of Outcome Measures by Individual Level, Predisposing and Enabling Characteristics

	Delays			Preventive Care		
	Any Reported Delay, % (95% CI)	Problem seeing a specialist, % (95% CI)	Problem receiving needed medical care, % (95% CI)	Had a flu shot in past 12 months, % (95% CI)	Had a mammogram in past 24 months, % (95% CI)	Had a pneumococcal vaccine, % (95% CI)
Age Groups						
Ages 50 to 64 yrs. (uninsured)	45 (33, 56)*	43 (29, 58)*	43 (31, 56)*	33 (24, 45)*	81 (68, 89)	21 (15, 30)*
Ages 50 to 64 yrs. (insured)	18 (14, 23)*	27 (22, 34)	28 (23, 33)*	45 (39, 50)*	91 (85, 94)*	42 (25, 61)
Ages 65 yrs. and older (Ref.)	8 (5, 12)	19 (13, 27)	15 (11, 21)	58 (51, 64)	76 (68, 83)	50 (44, 57)
Gender						
Male	13 (10, 18)	22 (17, 29)	20 (16, 27)	54 (48, 59)	--	46 (38, 54)
Female	16 (13, 20)	26 (21, 32)	24 (20, 29)	48 (43, 53)	--	43 (37, 50)
Race/ethnicity						
African American	16 (13, 21)	23 (18, 29)	21 (17, 26)	45 (40, 50)*	83 (77, 88)	46 (40, 52)
Latino	13 (10, 18)	27 (20, 36)	25 (19, 32)	58 (51, 65)*	80 (71, 87)	41 (32, 50)
Income as Percent of Federal Poverty Level						
0-99% FPL	16 (12, 22)	31 (24, 40)*	27 (22, 35)*	49 (44, 54)	80 (72, 86)	49 (43, 54)
100%+ FPL	14 (11, 18)	18 (14, 24)*	18 (15, 22)*	52 (45, 59)	84 (79, 88)	40 (31, 50)
Presence of Chronic Disease						
None (ref)	10 (6, 16)	22 (14, 33)	17 (11, 25)	30 (22, 40)	68 (54, 80)	28 (15, 46)
One	14 (11, 20)	23 (17, 31)	21 (16, 28)	46 (40, 53)*	82 (73, 88)	41 (33, 50)
Two or more	18 (14, 22)*	26 (21, 33)	25 (20, 31)	59 (54, 64)*	85 (79, 90)*	48 (41, 54)*
Healthy People 2010 Goal	<7	n/a	n/a	90	90	90
						50

Note: Predicted Percentages are adjusted for all other covariates, including gender, race, poverty status, health coverage, and presence of chronic conditions. All statistically significance compared to reference are noted in bold and asterisked (p<0.05). Pneumococcal vaccination assessed for those with a clinical indication, including diabetes, chronic lung disease and those age 65 and older. n/a=not available in current Healthy People 2010 goals.