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Quiana Joyce Lewis
Yale University, quianalewis@gmail.com

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Everyday Discrimination and Life Space in Older African American Adults

Quiana J. Lewis, Tene T. Lewis, PHD, Lisa L. Barnes, PHD

ABSTRACT

The current study seeks to explore the association between self-reported experiences of discrimination and life space. Life space is a multidimensional construct that measures the spatial area for which a person intentionally interacts on a daily basis. We explored the cross-sectional association between self-reported experiences of discrimination and life space in a sample of 350 African American older adults recruited between August 2004 and January 2010 from various community-based organizations, churches, and senior facilities within the greater Chicago, IL area. The study participants reported low amounts of discrimination and large life spaces (approximately two-thirds of the population ventured outside of town). The results of this study did not support an association between self-reported discrimination and life space. Future studies should explore this relationship longitudinally and account for frequency of movement within each life space zone.

"Black Americans spend much of their lives at a distance from white Americans, in part because they feel more comfortable that way, and in part because their separation has been imposed by white America."

~ Andrew Hacker (Hacker, 1995)

Discrimination is ubiquitous (Utsey, Ponterotto, Reynolds, & Cancelli, 2000). In the social hierarchy of American culture, blacks are inherently inferior to whites (Hacker, 1995). For this reason, African Americans report experiencing discrimination at a significantly higher rate than white Americans (Krieger & Sidney, 1996; Plummer & Slane, 1996), which manifests both individually (i.e. unfair monitoring in a retail store) and institutionally (i.e. unjust policies) (Utsey et al., 2000).

Within recent years, more research has explored the biopsychosocial impact of this type of adversity. The chronic compounding of stress from "everyday" discrimination has been found to have deleterious effects on health and increased risk of mortality in older adults (Barnes et al., 2008; Krieger, Kosheleva, Waterman, Chen, & Koenen, 2011; Lewis et al., 2006; Lewis, Aiello, Leurgans, Kelly, & Barnes, 2010; David R Williams & Mohammed, 2009). Furthermore, the effects of stress on the body are often dependent on the coping strategies implored to handle adverse stimuli such as discrimination. Maladaptive coping techniques for stress may propagate concomitant poor mental and physical health outcomes. Plummer and Slane noted that blacks are more inclined to resort to avoidance strategies, such as

distancing (1996), when faced with discrimination or related stressors (Amirkhan, 1990). The quote by Andrew Hacker on the purposeful distancing of black and white Americans raises the question of how chronic discrimination has impacted the movement patterns of older African Americans adults, as they would have lived through a period when public discrimination against blacks was widely accepted and legally sanctioned.

Life space is a multidimensional construct, which measures the spatial area for which a person intentionally interacts on a daily basis. The Life Space Questionnaire (Stalvey, Owsley, Sloane, & Ball, 1999) quantifies movement through specific areas of the environment (Boyle, Buchman, Barnes, James, & Bennett, 2010). Figure 1 shows how life space is conceptualized; it is partitioned into six zones ranging from severely constricted (i.e. bed-bound) to unrestricted (i.e. traveling to distant locations) (Stalvey et al., 1999). Life space measurement goes beyond evaluating personal activities of daily living (ADLs) and instrumental activities of daily living (IADLs) which include bathing, dressing, toileting, meal preparations, shopping and social interactions; it measures the effect of biomedical, psychological, socioeconomic, environmental and social support factors on mobility (Baker, Patricia Sawyer, Bodner, Eric V., Allman, 2003; Boyle et al., 2010; Stalvey et al., 1999). Consequently, limited life space has been linked to negative health outcomes such as frailty (Xue, Fried, Glass, Laffan, & Chaves, 2008), poor nutrition (Locher et al., 2005), Alzheimer's disease, cognitive decline (James, Boyle, Buchman, Barnes, & Bennett, 2011) and mortality (Boyle et al., 2010).

The current study seeks to explore the association between perceived experiences of discrimination and life space. We hypothesize that African Americans who report experiencing higher amounts of discrimination will have smaller life spaces compared to respondents with lower levels of self-reported discrimination.

METHODS

Sample

The Minority Aging Research Study (MARS) is a longitudinal cohort of more than 350 African American older adults recruited between August 2004 and January 2010 from various community-based organizations, churches, and senior facilities within the greater Chicago, IL area. Eligible participants were at least 65 years of age, had not been diagnosed with dementia at baseline and self-identified as non-Hispanic African Americans. Participating seniors agreed to engage in detailed annual clinical examinations and cognitive testing. The Institutional Review Board of Rush University Medical Center approved the MARS study; and, in conjunction with Rush, the Yale University Institutional Review Board also approved the secondary analysis.

Design

According to MARS protocol, each participant completed an in-person interview conducted in his or her home by a trained research assistant and nurse practicioner. The structured clinical evaluations included a physical and neurological exam, medical history review, neuropsychological testing and blood specimen collection.

Measurement

Discrimination was assessed using the 9-item Detroit Area Study Everyday Discrimination Scale (Williams, Yan Yu, Jackson, & Anderson, 1997). The scale asks participants to report the frequency with which they face interpersonal adversity on a daily basis. Questions are phrased so their attributes were not race or gender specific; for example, "You are threatened or harassed", and "People act as if they are better than you are". Much like the life space tool, the responses to each item were summed to obtain a score ranging from 0 (no discrimination) to 9 (frequent discrimination).

Life space was measured using the modified version of the Life Space Questionnaire (Barnes et al., 2007). Participants were asked questions regarding travel to 6 concentric areas in their environment within the past week, which included rooms outside the bedroom, porch/patio, parking lot/yard, neighborhood and outside town. Life space scores (ranging from 0 to 6) were based on the largest area visited; for example, venturing to the parking lot but not outside the neighborhood would render a score of 3 because a "no" response to a smaller zone automatically discounts larger zones.

Furthermore, demographics including sex, age and education were assessed via self-report. Body Mass Index was calculated by dividing weight in kilograms by height in meters squared. Disability was assessed via the Katz and the Established Populations for Epidemiologic Studies of the Elderly (EPESE) scales, which measured six basic activities of daily living and eight instrumental activities of daily living, respectively (Katz & Akpom, 1976; Cornoni-Huntley, Brock, Ostfeld, Taylor, &

Wallace, 1986). The number of preexisting chronic conditions and depressive symptoms were ascertained and a social isolation scale measured participant's sense of social connectedness.

Statistical Analysis

The life space zones were consolidated into four categories (Figure 1) based on the frequency of endorsement. "Homebound" (life spaces 1-3) includes persons venturing no further than their parking lot or yard, "In/Neighborhood" (life space 4) includes movement with in the neighborhood but not outside of the neighborhood, "Out/ Neighborhood" (life space 5) accounts for movement outside of the neighborhood but not outside of town, and "Outside of Town" (life space 6) includes travel outside of town. Descriptive statistics were utilized to characterize the respondents on age, education, sex, reports of discrimination, and covariates of interest. T tests and χ^2 tests were run to test for gender differences in these characteristics. Because the majority of the population reported life space scores in the two largest categories, a logistic regression model was used to examine the association between reports of discrimination and life space categories "Out/Neighborhood" and "Outside of Town". Additionally, the model adjusted for the effects of other covariates such as education, disability, social isolation, and depressive symptoms.

RESULTS

Sample Description

Figure 2 shows the distribution of life space levels across the sample population. A large majority of the population (93%) had expansive life spaces, reporting movement outside their neighborhood and beyond within a week of the interview. The sample was largely female (74%) with a mean age of 73.5 years for all participants. Approximately 40% have a college degree of which 25.3% have experience in graduate/professional studies.

There was no significant difference between the ages of the males and females in the sample (p=0.965). However, respondents in the "Outside of Town" category were significantly younger than those in the "Out/ Neighborhood" category (p=0.003). There was no significant difference between education levels and life space constrictions (p=0.396). The social isolation scores for the "outside of town" group were significantly lower than those in the "within neighborhood" and "outside neighborhood" categories (p<0.000). There was a significant difference in the mean number of depressive symptoms between groups "outside neighborhood" and "outside of town" with the latter reporting the lowest number of depressive symptoms (p=0.042). Study participants in all other life space groups had significantly more disabilities (ADLS and IADLs) than the "outside of town" group (p<0.000). When stratified by sex, women had significantly more IADLs (p=0.001). There was no significant difference in mean BMI scores between males and females or life space levels. The number of comorbid conditions was low across the sample and no significant difference between life spaces or gender was found.

Mean discrimination reports averaged at 1.67 and steadily decreased as life space increased; however, the discrimination differences between each life space

category were not significant (p= 0.817). Additionally, men reported significantly more discrimination occurrences than women (2.05 and 1.50, respectively; p=0.021), but men were also more likely to have larger life spaces (p=0.038). *Self-Reported Discrimination and Life Space*

Since the majority of the study population reported mobility within the two largest life space categories, a binary logistic regression was used to model the relationship between self-reported discrimination and the two largest life space sizes. Table 3 shows the results of the logistic regression for which no association of the main effect was found (OR 1.01; 95% CL 0.90-1.13). Social isolation, however, was significantly associated with life space size (OR 0.58; 95% CL 0.37-0.91).

DISCUSSION

A wealth of research supports the negative biopsychosocial effects of discrimination on health outcomes (Clark, Anderson, Clark, & Williams, 1999; Paradies, 2006), however, no published research has explored chronic discrimination as a factor for life space size of older African America adults. In this study, it was hypothesized that a negative association would exist between self-reported discrimination and life space size in a population of community-dwelling older adults. Albeit conceptually this relationship is logical, the methodological limitations of the measures, characteristics of the sample and mediating environmental factors (i.e. racial homogeneity of community members) may have contributed to the null finding.

Overall, participants reported low levels of discrimination. On a scale ranging from 0 to 9 (0 = no reports of discriminations and 9 = frequent occurrences), the mean number of discrimination occurrences were 1.67, which indicates the majority of the study participants reported only one or two instances of unfair treatment. This is congruent with the Dailey et. al. study where a large majority of the study sample did not report unfair treatment. It was stated that discrimination reports could have been attenuated by other factors such as social desirability, sensitivity of the subject, or discomfort in reporting discrimination occurrences. If in fact the study participants underreported, this would cause an underestimation of the prevalence of discrimination and may have further diminished the association between discrimination and life space (Dailey, Kasl, Holford, & Jones, 2007).

Albeit the majority of the sample population reported large life spaces, frequency of movement within each life space was not captured. For example, based on this tool, a 75-year-old woman who only leaves her home to attend church once a week, which happens to be in the next town, would report having a large life space. This study used results from a modified version of the original Life Space Questionnaire, which ask about movement within concentric zones within the time frame of a week as opposed to three days used in the original questionnaire (Stalvey et al., 1999). The more conservative time period recall may have decreased the likelihood of observing a ceiling effect by controlling for occasional events such as trips to church or the doctor's office. In a similar study conducted by the University of Alabama at Birmingham (UAB) Study of Aging Life-Space Assessment (LSA), they found measuring the frequency of life-space attainment rendered a high degree of

stability for the life space measures (Baker, Patricia Sawyer, Bodner, Eric V., Allman, 2003).

On average, the cohort of African American older adults in this study was highly educated and very mobile, which may have impacted the study findings. The majority had more than a high school education (70%) of which 40% had at least a college degree. Additionally, 66% of the cohort reported traveling outside their respective town within the past week. Comparatively, the black participants in the UAB study were less educated (majority reporting less than 12 years of education) and had life space scores more evenly distributed across the spectrum (Locher et al., 2005).

Additionally, the racial characteristics of the communities for which the participants reside may have also buffered the relationship between life space and self-reported discrimination. This study was based in Chicago, so the African America population represented may live in largely homogeneous communities creating a structural reduction in opportunities to experience interpersonal discrimination. In a study of the effects of social context on African American's discrimination reports, Hunt et al found that there is a linear inverse relationship between the percent of blacks in a neighborhood and the perceived discrimination levels (Hunt, Wise, Cozier, & Rosenberg, 2007).

Aside from the self-reported discrimination and life space findings, results of the statistical analysis showed a significant associated between social isolation variables and sex differences in life spaces. The amount of social isolation was negatively correlated with life space size; so, participants reporting high amounts of

isolation were more likely to have smaller life spaces. Similar studies found this trend with life space and social determinants (Barnes et al., 2004; James et al., 2011; Locher et al., 2005).

This study has strengths. To our knowledge, no published literature has explored the association between self-reported discrimination and life space size. Much of life space research has focused on life space size as a predictor of health outcomes; however, this study is the first to explore self-reported discrimination as a factor in predicting life space size. Therefore, this study is contributing new information to the body of research on life space. Furthermore, this study used established measures to test both perceived everyday discrimination and life space. The discrimination measurement is well-validated and the life space tool allowed us to capture functional domains outside the scope of traditional disability measurement assessments such as ADLs and IADLs. Also, the cohort of African American adults consisted of community dwelling individuals as opposed to a clinic-based sample. This increases our ecological validity of the population we are studying.

CONCLUSION

The results of this study did not support the association between self-reported discrimination and life space. A null result may have occurred because of under reporting of discrimination, limitations of the life space measure and/or sample population characteristics. Future studies should explore this relationship longitudinally and account for the frequency and time spent in each life space.

Moreover, the study of life space is important for the well being of the older adult population. Independence is threatened when restrictions on mobility manifest. The study of life space could help target and evaluate intervention strategies by addressing specific risk factors that may impact mobility loss.

Additionally, given the sensitivity of the measure to detect impaired functioning, life space may permit identification of disability development at a time when prevention can be employed. Overall, further research on life space is needed to inform policies and programs to help older adults maintain their independence throughout their life course (Baker, Patricia Sawyer, Bodner, Eric V., Allman, 2003).

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APPENDIX A

Figure 1: Life Space Diagram

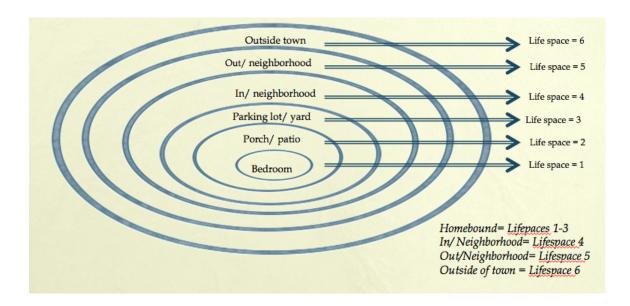


Figure 2: Life Space Distribution

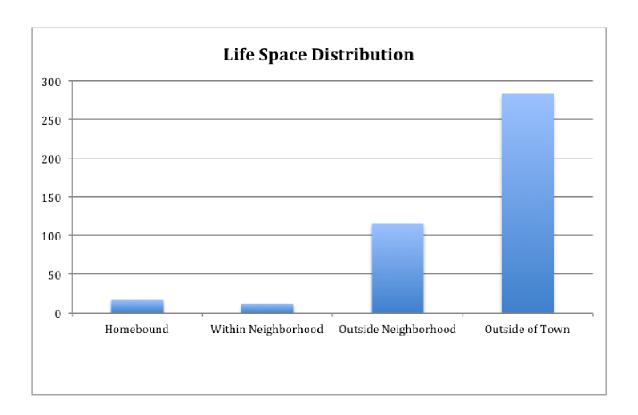
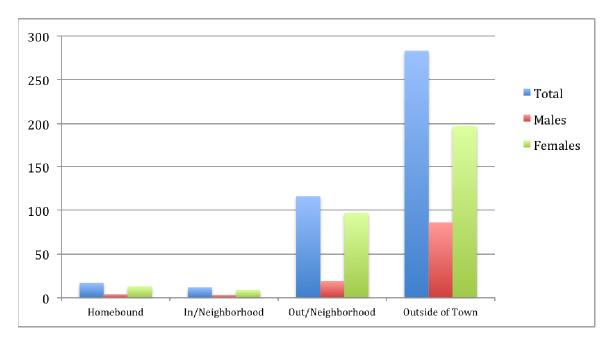


Figure 3: Life Space Distribution by Sex



APPENDIX D

Table 1: Characteristics of Sample by Life Space.

| | Degree of Life Space constriction | | | | |
|-----------------------------|-----------------------------------|----------------------------------|---------------------------------|--------------------------|---------|
| Variable | Homebound (n=17) | Within Neighborhood (n=12) | Outside Neighborhood (n=116) | Outside of town (n=283) | p-value |
| Age (mean) | 75.0 (5.04) | 77.2 (7.08) | 74.9 (7.50) _a | 72.8 (5.80) _b | .003 |
| Sex (%) | | | | | |
| Male (n=112) | 3.6 (4) | 2.7 (3) | 17.0 (19) | 76.8 (86) | .038 |
| Female (n=316) | 4.1 (13) | 2.8 (9) | 30.7 (97) | 62.3 (197) | |
| Education (%) | | | | | |
| ≤ 12 years (n=129) | 5.4 (7) | 3.1 (4) | 31 (40) | 78 (60.50) | .375 |
| 13-15 years (n=130) | 2.3 (3) | 3.8 (5) | 30.8 (40) | 82 (63.10) | |
| 16 years (n=60) | 6.7 (4) | 1.7 (1) | 23.3 (14) | 41 (68.30) | |
| > 16 years (n=109) | 2.8 (3) | 1.8 (2) | 20.2 (22) | 82 (75.20) | |
| Social Isolation (mean) | 2.2 (.57) | 2.4 (.56) _a | 2.2 (.57) _a | 2.0 (0.59) _b | .000 |
| Discrimination count (mean) | 2.0 (1.90) | 1.5 (2.07) | 1.8 (2.34) | 1.6 (1.98) | .817 |
| Depressive symptoms (mean) | 1.4 (1.50) | 1.8 (1.85) | 1.5 (1.75) _a | 1.1 (1.38) _b | .042 |
| Disability (mean) | | | | | |
| ADLs | .6 (1.06) _a | 0.1 (0.29) _b | 0.2 (0.59) _{b,c} | 0.1 (0.42) _d | .000 |
| IADLs | 1.2 (1.94) _a | 1.3 (01.96) _a | 0.7 (1.23) _a | 0.4 (0.73) _b | .000 |
| Body mass index (mean) | 28.0 (5.45) | 28.7 (7.48) | 30.6 (6.61) | 29.2 (6.12) | .157 |
| # of Medical Conditions | 1.8 (1.20) | 1.0 (073) | 1.6 (1.07) | 1.5 (0.91) | .174 |

Note: Values are mean \pm SD or percentage (n).

¹ P-values from ANOVA and χ^2 for life space differences. Based on post-hoc comparisons, variables with differing subscripts within rows are significantly different at the p<0.05 level.

Table 2: Characteristics of Sample by Sex.

| | Sex | | |
|-----------------------------|-------------|-------------|---------|
| Variable | Male | Female | p-value |
| Age (mean) | 73.6 (6.05) | 73.6 (6.53) | 0.965 |
| Education (%) | | | 0.396 |
| ≤ 12 years (n=129) | 31.0 (40) | 69.0 (89) | |
| 13-15 years (n=131) | 22.9 (30) | 77.1 (101) | |
| 16 years (n=61) | 27.9 (17) | 72.1 (44) | |
| > 16 years (n=109) | 22.9(25) | 77.1 (84) | |
| Social Isolation (mean) | 2.1 (0.50) | 2.1 (0.62) | 0.883 |
| Discrimination count (mean) | 2.05 (2.36) | 1.5 (1.94) | 0.021 |
| Depressive symptoms (mean) | 1.0 (1.3) | 1.3 (1.58) | 0.106 |
| Disability (mean) | | | |
| ADLs | 0.05 (0.57) | 0.13 (.50) | 0.164 |
| IADLs | 0.25 (0.78) | 0.63 (1.08) | 0.001 |
| Body mass index | 28.1 (4.70) | 30.1 (6.79) | 0.157 |
| # of Medical Conditions | 1.6 (0.92) | 1.5 (0.97) | 0.814 |

Note: Values are mean \pm SD or percentage (n).

 $^{^{1}\,\}text{P-values}$ from ANOVA and $\chi^{2}\,\text{for}$ differences between sex.

Table 3: Binary Logistic Regression

| Variable | B (S.E.) | Odds Ratio | 95% CL |
|---------------------|-------------|-------------------|-----------|
| Discrimination | .007 (.058) | 1.01 | 0.90-1.13 |
| Education | .067 (.109) | 1.07 | 0.87-1.32 |
| ADLs | 227 (.269) | 0.80 | 0.47-1.35 |
| IADLs | 256 (.147) | 0.77 | 0.58-1.03 |
| Depressive Symptoms | 010 (.087) | 0.99 | 0.84-1.18 |
| Social Isolation | 546 (.231) | 0.58 | 0.37-0.91 |

Life Space Questionnaire

During the past week, have you been to...

- 1. other rooms of your apartment (or home) besides the room where you sleep?
- 2. an area immediately outside your apartment (or home) such as your porch, deck, or patio, hallway or garage?
- 3. an area outside your apartment building (or home) such as the courtyard, yard, driveway, or parking lot?
- 4. places within your immediate neighborhood but beyond your own apartment building or property?
- 5. places outside your immediate neighborhood, but within your own town or community?
- 6. places outside your town or community

<u>Detroit Area Study Everyday Discrimination Scale</u>

- 1. "You are treated with less courtesy than other people"
- 2. "You are treated with less respect than other people"
- 3. "You receive poorer service than other people at restaurants or stores"
- 4. "People act as if they think you are not smart"
- 5. "People act as if they are a afraid of you"
- 6. "People act as if they think you are dishonest"
- 7. "People act as if they are better than you are"
- 8. "You and your family members are called names or insulted"
- 9. "You are threatened or harassed"